ENVIRONMENTAL PROTECTION

14 WASTEWATER RESOURCE RECOVERY FACILITIES' SPDES PERMITS
COMBINED SEWER OVERFLOWS
BEST MANAGEMENT PRACTICES
ANNUAL REPORT

FOR THE PERIOD
JANUARY 1, 2020 - DECEMBER 31, 2020

CITY OF NEW YORK

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF WASTEWATER TREATMENT

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CONTENTS

EXECUTIVE SUMMARY

The waters surrounding New York City are cleaner and healthier than they have been in more than a century. Over the past decade, the New York City Department of Environmental Protection (DEP) has invested approximately $10 billion in projects such as sewer system and wastewater treatment plant upgrades to improve the health of these critical ecosystems. This investment has produced many ecological successes, ushering in the return of a variety of plant and animal species to our waters. It has also supported the redevelopment of vast swaths of our waterfront and numerous recreational opportunities for residents and visitors alike.

Although we continue to make great strides in improving the health of our waterbodies, we still face challenges. New York City, along with hundreds of other American communities, is largely served by a combined sewer system (CSS) where stormwater that falls on roofs, streets, and sidewalks, and wastewater from homes and businesses are carried together through a single sewer pipe to treatment plants. The City's 14 treatment plants can manage and treat to federal Clean Water Act standards all the wastewater created in New York City on a dry weather day, or about 1.3 billion gallons on average. On a rainy day, they have the capacity to partially treat and fully disinfect up to 3.7 billion gallons per day. However, during intense precipitation events, the stormwater that falls on the City's impervious surfaces can exceed that capacity and can cause overflows, otherwise known as combined sewer overflows (CSOs), to be discharged into local waterways.

According to the National Weather Service's annual measurements, 42.3 inches of precipitation fell across NYC in CY2020 based on NOAA Qualitative Precipitation Estimates (QPE).. DEP implements three distinct strategies aimed at creating additional capacity in our wastewater system to reduce the number of CSOs during wet weather: grey infrastructure, green infrastructure and CSO Best Management Practices (BMPs).

GREY INFRASTRUCTURE

DEP has spent approximately $2.9 billion on baseline grey projects to date and has forecasted costs of about $6.43 billion for CSO Long Term Control Plan (LTCP) recommended projects and for construction of 2 CSO retention tanks in the Gowanus Canal, as required by the Superfund Record of Decision. To reduce CSOs, DEP has utilized a variety of grey infrastructure controls such as improvements to the headworks of wastewater resource recovery facilities (WRRFs), expanding the storm sewer system, separating storm sewers, sewer system and regulator optimization, and constructing large CSO retention tanks. The CSO LTCPs expand upon past successes and have

proposed additional CSO controls and ecological improvement projects. To learn more about the CSO Program visit nyc.gov/dep/ltcp.

GREEN INFRASTRUCTURE

DEP has constructed thousands of green infrastructure assets around the City such as rain gardens, green roofs, and porous surfaces to absorb stormwater runoff where it lands, thereby reducing the amount of stormwater entering the sewer system. In order to achieve this reduction, the Green Infrastructure Program has maintained critical partnerships with the Departments of Transportation (DOT), Parks and Recreation (DPR) and Education (DOE), the New York City Housing Authority (NYCHA), and other city agencies to implement green infrastructure on city-owned property. We are also continuing to develop private incentives to encourage New Yorkers to join us in managing stormwater and improving water quality. To date, more than 10,000 green infrastructure assets have been constructed or are in construction. See additional information in section 16.5.

CSO BEST MANAGEMENT PRACTICES

DEP has also continued implementation of CSO BMPs to optimize existing facilities to capture and convey more wet-weather flow to the City's WRRFs. The State Pollutant Discharge Elimination System (SPDES) permits for the City's treatment plants list fifteen different CSO BMPs, which amplify EPA's national CSO Control Policy. This 18th Annual Report describes DEP's ongoing program to advance those BMPs and provides statistics for calendar year 2020. The report is divided into seventeen sections covering each of the BMPs and the additional Special Conditions listed in the SPDES permits.

Notable CSO BMP achievements during 2020 include:

- DEP inspected 147,840 feet of intercepting sewers citywide and removed 4,035 cubic yards of sediment. An additional 3,545 cubic yards of sediment were removed from non-interceptor assets such as treatment plants, pumping stations, regulators, and other sewer appurtenances.
- DEP's in-house forces cleaned over 191.37 miles of sewer in response to 11,066 customer service requests, and 148.6 miles of sewer as a proactive measure to combat buildup from fats, oils, and grease (FOG).

MORE INFORMATION ABOUT WATER QUALITY

Beaches (see also Section 1.1): During the summer months, DEP works closely with the NYC Department of Health and Mental Hygiene (DOHMH), which oversees bathing water

quality at City beaches. DOHMH has an extensive beach monitoring program and posts wet-weather advisories if local waterways are affected by CSOs or faulty septic systems. DOHMH's 2019 Beach Surveillance and Monitoring report can be found online at:https://www1.nyc.gov/assets/doh/downloads/pdf/beach/beach-report-2019.pdf. For information on beaches, visit the NYC Beach Water Quality website at https://maps.nyc.gov/beach/

Other Waterbodies: DEP regularly posts additional monitoring data on our website, including non-beach waterbody advisories. In 2020, DEP launched an updated Waterbody Advisory System that the public can use when planning recreational activities in locations other than beaches; the advisories are based on water quality models and real-time rainfall data.

The new Waterbody Advisory System also:

- Expands from 28 to 45 the number of waterbodies that could receive an advisory
- Utilizes and displays rainfall data from rain gauges at all 14 WRRFs
- Provides more detailed advisory durations based on measured rainfall
- Uses primary contact recreation standards

New Yorkers can visit DEP's website for up-to-date information or register for daily alerts at NotifyNYC.

http://www.nyc.gov/html/dep/html/stormwater/combined_sewer_overflow.shtml

1 CSO MAINTENANCE AND INSPECTION PROGRAM

"The permittee shall develop and implement a written maintenance and inspection program for all CSOs listed beginning on page 3 of this permit. This program shall include all regulators tributary to these CSOs. This is to ensure that no discharge or leakage occurs during dry weather and that the maximum amount of wet weather flow is conveyed to the WWTP for treatment. This program shall consist of scheduled inspections with required repair, cleaning and maintenance performed as needed to prevent dry weather overflow and leakage and ensure maximum wet weather flow is conveyed in accordance with CSO BMP #4. Inspection reports shall contain a record of visual inspections, any observed flow, incidence of rain or snowmelt, condition of equipment and work required."

DEP submitted the CSO Maintenance and Inspection Program to DEC on August 14, 2003. See Appendix 1.1, Exhibit 1.

A summary of preventive and corrective maintenance performed during 2020 on all regulators tributary to each treatment plant, being submitted under separate cover, is attached as Attachment A. The table shows the regulator number, the date when preventive maintenance (PM) was performed at each site and whether any corrective actions were completed (designated on the table by an 'x').

PM of a regulator consists of a physical inspection of the regulator and diversion chambers as well as of the branch interceptors or drop pipes. It also includes exercising or lubrication of sluice gates and any other maintenance not considered corrective.

Corrective Maintenance (CM) of a regulator includes the clearing or cleaning of all blockages within the diversion chamber, regulator, branch interceptor or drop pipe. It also consists of any replacement of manhole rungs and the cleaning of all sensors within the chambers.

All inspections performed in 2020 are listed in Attachment A.

1.1 BEACH PROTECTION

During the Enhanced Beach Protection period from May 15 through September 30, DEP performed inspections of beach-sensitive regulators through telemetry twice per day. Shift engineers from the Bureau of Wastewater Treatment (BWT) Collection Facilities Operations (CFO) monitor these locations at the beginnings of their shifts and at the ends of their shifts. If telemetry is inoperable, field crews perform site inspections until the

telemetry is corrected. See Attachment A for locations DEP inspected when the telemetry was inoperable (designated by an ‘x’ in the column EBPP).

(b) For all plants except Rockaway: “The permittee shall include in the maintenance and inspection program a plan to maintain CSO tide gates to prevent infiltration of seawater into the collection system such that the WWTP influent concentration of chlorides does not exceed a twelve month rolling average of 400 mg/l. The maintenance and inspection program shall specify corrective actions to be taken within twelve months of the influent chloride exceedance of 400 mg/l.”

Treatment plant and process personnel notify CFO if they measure elevated chloride levels and flow at their respective treatment plants. CFO personnel initiate a “chloride run” in response to the elevated chloride levels and extra flow. A “chloride run” is a visual inspection of the tide gates within the drainage area experiencing the high chlorides, followed by removal of debris, as needed, and closing of any gates found to be open. DEP performs chloride inspections in addition to the standard regulator maintenance and inspection of regulators. Please refer to Attachment A for the results of those inspections (table column designated Cl).

Attachment A contains a summary of PM and CM performed during 2020 on all tide gates tributary to each WRRF. The table sets forth the Regulator Numbers, the dates when the corresponding facility performed PM (designated by an ‘x’ in the column TG PM) and whether any corrective actions were completed (designated on the table by an ‘x’ in the column TG CM).

PM of a tide gate consists of the physical inspection and exercising of the tide gate as well as any other maintenance not considered corrective.

CM of a tide gate includes removal of debris from the gate, cleaning of the rubber seals and rebuilding and refurbishing of all hardware as well as of the flap itself (which includes stop planking, gate removal, hardware cleaning, tap and chase adjusting bolts and new seals if required).

Chloride Levels decreased at the following facilities:

Hunts Point, 26th Ward, Red Hook, Jamaica, Oakwood Beach

Chloride Levels increased at the following facilities:

Wards Island, North River, Coney Island, Owls Head, Newtown Creek, Tallman Island, Bowery Bay, Rockaway, Port Richmond

Analysis for calendar year 2020 shows that the following four WRRFs exceeded the twelve-month rolling average of influent chlorides concentrations of 400 mg/l:

Wards Island, Hunts Point, Coney Island, and Port Richmond

For more information regarding chloride levels at all 14 WRRFs see Appendix 1, Table 1.

Comparative yearly analysis of CY 2019 and CY 2020 average tidal inflow (Appendix 1, Table 2) indicates:

A decrease in estimated tidal inflow occurred at seven WRRFs:

- North River, Hunts Point, Coney Island, Newtown Creek, Bowery Bay, Rockaway, Port Richmond.

An increase in estimated tidal inflow occurred at seven WRRFs:

- Wards Island, 26th Ward, Owls Head, Red Hook, Jamaica, Tallman Island, Oakwood Beach.

> *(b) For Rockaway only: "The permittee shall include in the maintenance and inspection program a plan to maintain CSO tide gates to prevent infiltration of seawater into the collection system such that the WWTP influent concentration of chlorides does not exceed a twelve month rolling average of 3,000 mg/l. Should the twelve-month rolling average be exceeded, the permittee shall conduct an inspection of the tide gates and submit a report to the Department within 3 months describing the inspection findings, remedies taken and, if necessary, a schedule for completing repairs that cannot be completed by the time of the report submission. If the elevated concentrations persist upon completion of the repairs, the permittee shall initiate a chloride source investigation Infiltration & Inflow (I&I) Study within 12 to 24 months of the chloride exceedance. The Permittee shall complete the I & I study and submit an approvable report within 36 months of determining that the elevated chloride concentrations persist, describing the findings of the I&I study and providing a schedule for collection system repairs."*

As per the 2015 SPDES permit for Rockaway WRRF, the requirements included in CSO BMP No. 1(b) have changed as described above. Analysis for calendar year 2020 shows that Rockaway did not exceed the twelve-month rolling average of influent chlorides concentration of 3,000 mg/l.

> *(c) "The permittee shall include in the maintenance and inspection program a schedule for telemetering regulators and a plan to report the telemetering results. Within six months after completion of the telemetering of regulators required in the NYSDEC/NYCDEP Omnibus IV Consent Order Compliance Schedule (as noted in the outfall description page), the permittee shall record and report the number and duration of events that cause a discharge at an outfall during dry weather conditions. "*

DEP completed the installation of the telemetering equipment at 102 regulators in May 2001 pursuant to the Compliance Schedule set forth in the Omnibus IV Consent Order, DEC Case # R2-0045-93-05. At present, DEP maintains the upgraded system at 100

regulators through a service contract. The contractor is responsible for all maintenance issues and for providing monthly reports detailing all significant events.

The successful implementation of the regulator telemetry system has had a significant impact on the reduction of raw sewage bypasses. The system has allowed CFO field personnel to respond to problems in a timely manner and to reduce or prevent dry weather bypassing.

In calendar year 2020, Collections Operations field personnel responded to a total of 197 pump station and regulator-related alarms sent by the SCADA Telemetry System. All alarms that resulted in call-outs were either false or resulted in elimination of a bypass event.

> *(d) "CSO maintenance and inspection program reports shall be available for DEC review no later than 9 AM on the day following the day the inspection was conducted and shall be available for DEC review at the associated WWTP no later than 30 days following the inspection."*

DEP keeps the CSO maintenance and inspection program reports, log sheets and inspection forms at each respective crew quarters, and the documents are available for DEC review upon request.

2 MAXIMUM USE OF COLLECTION SYSTEM FOR STORAGE

"The permittee shall optimize the collection system by operating and maintaining it to minimize the discharge of pollutants from CSOs. It is intended that the maximum amount of in-system storage capacity be used (without causing service backups) to minimize CSOs and convey the maximum amount of combined sewage to the treatment plant in accordance with BMP #4 below. This shall be accomplished by an evaluation of the hydraulic capacity of the system but should also include a program of flushing or cleaning to prevent deposition of solids and the adjustment of regulators and weirs to maximize storage."

Interceptors that deliver wet weather flow to the WRRFs have the ability to provide in-line storage during wet weather. The following conditions induce this storage: when (a) the influent wet weather flow exceeds the WRRF capacity and the facility must throttle, (b) the WRRF wet well operates above the invert of the influent sewers, or (c) other site-specific circumstances occur. Generally, in these cases, in-line storage of a few hundred thousand to a few million gallons (MG) will be induced in the system.

The SPDES permits also contain management practices for maximizing use of the collection system to reduce CSOs. In May 2011, DEP initiated a pilot program in which the Stationary Electric Engineer (SEE) at the BWT Communication Center monitors approaching storms and notifies the plant Operations SEEs to begin reducing their wet-well elevations immediately, prior to the onset of rain. This action helps increase available capacity in the interceptor, which can reduce CSO volumes. Each plant has established low-well elevation set points for impending rain events and has documented them in its Wet Weather Operating Plan (WWOP).

In-line storage upstream of CSO Control Facilities induces storage within the barrels upstream from the CSO facilities when operated in accordance with their WWOPs, as described below.

- Paerdegat Basin CSO Retention Facility – DEP certified completion of construction of this facility in May 2011 in accordance with the CSO Order on Consent entered into by NYC and DEC on January 14, 2005, (DEC # CO2-2000107-8, as modified) (hereinafter, the "CSO Order"), and placed the facility into service at that time. The Paerdegat Basin CSO retention facility induces 20 MG of tank storage in conjunction with 10 MG of in-line storage in the influent sewers and another 20 MG in the upstream combined sewers.
- Flushing Bay CSO Retention Facility – DEP certified completion of construction of this facility in January 2011 in accordance with the CSO Order, and placed the facility into service at that time. The Flushing Bay CSO retention facility induces 28.7 MG of tank storage in conjunction with 15.1 MG of in-line storage in the upstream sewers.

- Spring Creek CSO Retention Facility – DEP certified completion of construction of this facility in July 2009 in accordance with the CSO Order, and placed the facility into service at that time. The Spring Creek CSO Retention Facility induces 13.8 MG of tank storage in conjunction with 6.2 MG of in-inline storage.
- Gowanus Canal CSO Facilities Upgrade – DEP certified completion of upgrades to this facility in February 2015 pursuant to the CSO Order. The RH-034 CSO outfall screens include a combination of fixed weirs and hydraulically operated outfall gates that direct flow through the CSO screens and induce inline storage within the combined sewers upstream of the outfall. DEP estimates, using InfoWorks models, that this inline storage may reduce CSOs by about 16 MG/yr.
- Newtown Creek Bending Weirs – DEP certified completion of the bending weirs and floatables control on November 22, 2017 and these modifications have resulted in about a 310 MGY reduction in CSO discharges. Flushing Bay High Level Interceptor Regulator Modifications – These modifications to the Flushing Bay regulators were certified complete on June 8, 2018 and resulted in approximately a 347 MGY reduction in CSO discharges.
- Westchester Creek Regulator Modifications and Parallel Sewer – DEP certified construction completion for these two projects on September 21, 2020 and March 2, 2020, respectively. These two projects resulted in an approximately 440 MGY reduction of CSO discharges into Westchester Creek.

2.1 SCADA/Collection Facilities Telemetry System Project

BWT completed the upgrade work on the SCADA project in 2013. The overall project involved the upgrade of the SCADA software, communication hardware to dual wireless and installation of additional instrumentation for the computerized data collection system. On February 18, 2013, DEP declared the Citywide Collection Facilities SCADA System (CCFISS) upgrade contract REG-027 “substantially complete” at all Pump Stations, 102 regulators and CSO Overflow facilities.

During 2020, DEP serviced the system through a maintenance contract. The contractor is responsible for the maintenance of the monitoring hardware to ensure continuous operation of the telemetry system. As per the SPDES Permit Requirement, CSO BMP Special Conditions, Appendix B.5 (b) – Key Regulator(s) Monitoring Reporting, DEP submitted to DEC monthly reports of potential CSO discharges outside the period of critical wet weather events, using the data from the telemetry system at key regulators.

The list of regulators under the SCADA project is in Appendix 2 (DEP BWT), Table 1.

2.2 Tide Gates

A program is in place to repair defective tide gates in order to prevent tidal waters from entering the system. Below is an update of tide gate locations completed and those under reconstruction:

Regulator/Tide Gate Report Status

Reg. #	Status	Schedule	Scope	Comments
NR-34	Complete	August 2012	New Gate	Contract REG-025L
NC(M)-48	Complete	September 2011	New Gate	Contract REG-025L
NC(M)-21	Complete	September 2011	New Gate	Contract REG-025L
NC(M)-23	Complete	September 2011	New Gate	Contract REG-025L
NC(M)-33	Complete	September 2011	New Gate	Contract REG-025L
WI(M)-24	Complete	April 2013	New pull box	Contract REG-025L
Oakwood Beach Flume	Canceled			DEC instructed not to install this gate
BBLL1,3,4,8, 9,11,17,18,21,22, 23,30, HL-2, L-2	Complete	December 2017	21 New Gates	JOC Contract
NCB-1,6,7,9,14	Complete	January 2013	15 New Gates	JOC Contract
RH-9,11,15	Complete	January 2013	4 New Gates	JOC Contract
PR-9E,11E,13E, 16E,36	Complete	January 2013	8 New Gates	JOC Contract
WIM-14,15,16,50	Complete	3/ 14/ 2013	4 New Gates	JOC Contract
NCM-18,31,51A	Complete	2/ 26 / 2013	3 New Gates	JOC Contract
WIB-67	Complete	2 /22 / 2013	4 New Gates	JOC Contract
JAM-14	Complete	9 /5/ 2013	4 New Gates	JOC Contract
26W- 01	Complete	6/7/2018	6 New Gates	JOC Contract

26W-02	In Construction	Estimated completion – 09/30/2021	16 New Gates	JOC Contract
WIB -68	Completed	March 14, 2018	2 New Gates	JOC Contract
TI-1	Completed	Done by CFN in 2017	Cover & Frame	CFN
TI-2	Completed	Tide gate is no longer needed.	1 gate	CFN
TI-4	Completed	May 11, 2017	1 New Gate	JOC Contract
TI- 5	Completed	June 7, 2019	1 New Gate	JOC Contract
HP-14	Completed	June 7, 2019	4 New Gate	JOC Contract
PR -4E, 8E, 17E, 29E, 31E, 34E, 37E, 6W	In Design	Estimated Completion – August 2021	12 New Gate	JOC Contract
NCM-1	In Design	Estimated Completion – June 2021	1	JOC Contract

2.3 INTERCEPTOR IMPROVEMENT PROGRAM

In 2020, BWT continued with its intercepting sewer inspection, cleaning, and rehabilitation program.

2.3.1 Scope of Work Completed in 2020

In 2020, DEP's Interceptor Improvement Program proceeded with inspections, cleaning, and rehabilitation of large intercepting sewers. During 2020, DEP inspected 147,840 feet of intercepting sewers citywide and removed 4,035 cubic yards of sediment. An additional 3,545 cubic yards of sediment were removed from non-interceptor assets such as treatment plants, pumping stations, regulators, and other sewer appurtenances, for a total of almost 7,580 cubic yards.

Table 1: Interceptor Inspected Pipe Summary and Sediments Removed by Drainage Area (2020)

Drainage Area	Inspected Length (ft)	Sediment Removed (cubic yards)
26th Ward	5,672.80	-
Bowery Bay		215.02
Coney Island		1,827.90
Hunts Point		-
Jamaica	37,179.50	46.78
Newtown Creek		2.97
North River	49,913.60	-
Oakwood Beach	48,923.00	66.78
Owls Head		769.66
Port Richmond		636.15
Red Hook	6,150.90	3.49
Rockaway		75.36
Tallman Island		1,134.57
Wards Island		2,800.71
Total	**147,839.80**	**7,579.39**

Using the Pipeline Assessment Certification Program (PACP) defect coding and condition scoring rating system developed by National Association of Sewer Service Companies (NASSCO) along with sound engineering judgment, DEP prioritized work such as repairs and cleaning of intercepting sewers. As a screening tool, the PACP system allows for quantitative identification of differences in pipe condition between one CCTV/sonar

(inspection) and subsequent inspections, and prioritization based on significance of the defects in the different pipe segments.

The PACP grades two categories of defects: 1) structural and 2) operation and maintenance (O&M). Each condition defect code is assigned a grade from 1 to 5 (with 5 being the worst condition), based on significance of the defect. For each category an overall pipe index/rating is calculated from a summation of all of the defects and the total number of defects. A rank from 1 to 5 (with a 1 being the highest priority) is then assigned to the pipe, depending on the severity of the defects over the entire pipe (manhole to manhole).

Pipes with priority ranking of 1 in the O&M category will be cleaned. Pipes with priority ranking of 1 in the structural category (those with the highest PACP grades) will be subject to a detailed engineering investigation to determine whether their rehabilitation and inclusion in the capital program are necessary. DEP will track the condition of pipes with lower ranks (and lower priority) over time to follow their structural degradation and impact on flow and storage capacity; closer attention will be given to those with a priority ranking of 2.

Other important information to note Appendix 2.2.3 contains Table 3 – Intercepting Sewer Inspections 2020 – Pipe Rating Index and Ranking. Additionally, the 2020 Map of Intercepting Sewers inspected (CCTV/Sonar) and the locations cleaned are shown in Appendix 2.2.5

2.4 SEWER CLEANING AND INSPECTION

2.4.1 Introduction:

DEP maintains its sewers through a program of inspections and cleaning. DEP does inspections either in person or via camera (CCTV, zoom camera, or push cams). Sewer cleaning methods include hydraulic (flushing), mechanical (e.g., dragging, rodding, vactoring) and chemical (degreasing) procedures. DEP personnel and various contractors perform this work. Table 2-1 summarizes cleaning activities performed in calendar year (CY) 2020. Maps of the cleaning activities, by Community Board, for the Collection Systems Investigation (CSI) Section and NYC Department of Design and Construction (DDC) are in Appendix 2.

2.4.2 Sewer Maintenance – Complaint-based Inspection and Response:

The Bureau of Water & Sewer Operations (BWSO), Division of Field Operations, has personnel including construction laborers, supervisors, and technical staff whose primary

functions are operation, maintenance, and repair of the sewer collection and water distribution systems. For the sewer collection system, this Division performs investigations and responds to all sewer complaints received by the City's 311 call center, including sewer back-ups (SBUs), catch basin flooding, and street flooding. The Division also performs programmatic work involving sewer cleaning, and catch basin survey inspections and cleaning. The group works in conjunction with the BWT Industrial Waste section to investigate grease conditions, to perform programmatic degreasing to ensure proper operation, and to perform routine inspections with the engineering-based CSI section. Maintenance and repair yard facilities are located throughout the five boroughs of NYC; they are equipped with heavy duty and light duty construction vehicles, including truck-mounted crane vehicles (catch basin cleaning trucks), power jet flushing vehicles, power rodding auger trucks, and combined flusher/vacuum trucks.

During CY 2020, there were 11,066 customer service requests that resulted in sewer inspections. Of those requests, DEP determined that 9,193 were unrelated to the DEP infrastructure. In response to each request, the sewer maintenance division performs an initial inspection. This initial inspection includes inspecting the downstream and upstream manholes nearest the complaint location and collecting all data relevant to the incident. If the manhole inspection determines that the complaint was unconfirmed, meaning that the sewer was functioning as designed, crews are directed to perform hydraulic cleaning for at least two sections of sewer. If the sewer complaint is confirmed, meaning that there was evidence that the sewer was overtaxed, the crews are directed to initially perform hydraulic cleaning; if hydraulic cleaning does not alleviate the condition, crews perform mechanical cleaning to remove material obstructing flow in the sewer in order to resolve the condition.

In response to these complaints, DEP's in-house forces cleaned over 191.37 miles of sewer. This number either represents actual footage, or, when there was no report of an actual footage, represents an estimate of 150 linear feet between two manholes. As indicated, DEP performed the inspections and cleaning in response to service requests, and some of the footages may overlap with requests made at different times.

2.4.3 Sewer Maintenance – Proactive Inspection and Response

BWSO performs proactive sewer inspections and response through a program called the Sewer Operations and Analysis Program (SOAP), initiated by DEP in 2011. Quarterly, areas of the City associated with recurring, confirmed SBU complaints are assigned to each of the sewer yards for inspection.

Using its Geospatial Information System (GIS), DEP has divided the City into more than 157,700 sewer segments. A sewer segment is defined as a city block, street center line to street center line. Analysis has shown that approximately 0.62% of the overall sewer segments experienced a confirmed SBU, while only 0.19% of the overall sewer segments

experienced more than 1 SBU event. Locations with recurring service issues are the focal point of the SOAP program. Under the SOAP program, in-house staff inspects and investigates each street segment. The inspections may lead to cleaning, as warranted, spot repair, if necessary, or referral for capital replacement, as appropriate.

DEP manages FOG issues of varying severity to ensure effective resolution and future maintenance. DEP's Programmatic Degreasing List addresses recurring FOG conditions. DEP tracks and visits the locations on the List, and cleans them mechanically, hydraulically, or chemically according to an established programmatic schedule. During CY 2020, under this program, DEP proactively cleaned 148.6 miles of sewer. Some of these lengths may overlap depending on the frequency warranted by the FOG condition.

2.4.4 CSI Sewer Inspections

At times, field crews identify sewer conditions that require cleaning beyond the crews' capabilities. For example, the size and condition of the sewer or a record of recent, repeated cleanings may limit a crew's ability to take effective action. In these instances, DEP transfers the work to its CSI Section. The CSI staff then delineates the specific needs and boundaries of the work via more robust field inspection. Once staff defines the scope, DEP can assign the work to DEP's citywide contractors for cleaning and debris removal. Appendix 2 lists the locations and the activities, mapped by Community Board, including details of the areas and associated dates of cleaning activities.

DEP's CSI Section is also responsible for performing internal, visual inspections of sewers. Field crew initial responders identify the majority of the areas that require inspection. Other agencies, such as the New York City Department of Transportation (NYCDOT) and DDC, identify the balance of the inspection work when it is required to support their capital planning work. DEP's CSI Section, through in-house personnel and citywide contracting, inspected 418,448 linear feet (or 79.25 miles) of sewers at 830 locations throughout the city during CY 2020. Some of this footage overlaps with areas addressed by field crews. As explained above and further below, this overlap occurs because the visual inspection is done prior to cleaning activities, as it is necessary to determine the extent of cleaning needed. DEP also conducts post-cleaning inspections to verify that the contractor has completed the work in an acceptable manner.

2.4.5 Citywide Sewer Cleaning Contracts

As discussed above, after DEP inspects the sewers to determine the scope of cleaning required, it assigns the work to a contractor who performs the work for DEP at various locations citywide. The contractor has equipment capable of cleaning sewers with diameters up to and including 204". Using the citywide sewer cleaning contractor

resources, DEP cleaned 380,359 linear feet or approximately 72.04 miles of sewers in CY 2020. The cost of this work was $8,437,850.

2.4.6 Sewer Cleaning for Lining and Guniting Activities

DEP also rehabilitates sewers with the use of lining and guniting methods. For both lining and guniting, the first step is to remove all debris, grease, and silt from within the sewer. Upon completion of the rehabilitation, the sewers are either TV-inspected or visually inspected. In CY 2020, DEP lined 39,261linear feet (or 7.44 miles) of sewer at a cost of $3,911,049. In CY 2020, DEP gunited 4,752 linear feet (or 0.99 miles) of sewers at a cost of $4,048,701.

2.4.7 Sewer Cleaning and Inspection: Capital Project Design

DDC also performed sewer maintenance work associated with its capital project design program. Specifically, when DEP plans capital work for a specific location, DDC inspects the sewer infrastructure in the street via TV camera and then cleans as necessary. DDC inspected and cleaned 70,830 linear feet or 13.41 miles, as shown in detail in Appendix 2. (See Table 2-1)

Table 2-1: Summary of Sewers Inspected & Cleaned by DEP BWSO & DDC in CY 2020

METHOD	**INSPECTED & CLEANED (miles)**
In-House (Reactive)	191.37
In-House (Proactive)	405.8
CSI Unit	79.25
Lining	7.44
Guniting	0.99
DDC Inspections & Cleaning	13.41
TOTALS:	**698.17**

3 MAXIMIZE FLOW TO POTW

"Factors cited in BMP #2 above, shall also be considered in maximizing flow to the WWTP. Maximum delivery to the WWTP is particularly critical in treatment of "first-flush" flows. For each wet weather event, the treatment plant shall be physically capable of: receiving and treating a minimum of (plant specific wet weather capacity) through the plant headworks; a minimum of (plant specific wet weather capacity) through the primary treatment works (and disinfection works if applicable); and a minimum of (plant specific secondary system wet weather capacity) through the secondary treatment works during wet weather. The actual process control set points may be established by the Wet Weather Operating Plan required in BMP #4. The sewer collection system and associated regulating devices shall be optimized to the extent practicable to minimize the release of combined sewer overflows. In satisfying this BMP, the Permittee shall also comply with the Additional CSO BMP Special Conditions section of this permit."

DEP's WRRFs and associated interceptor sewers have been designed and constructed to deliver and treat approximately two times dry weather flow during wet weather. In order to protect the WRRFs' biological process to ensure effective treatment, as well as to guard against homes being flooded during wet weather events, conveyance structures called "regulators" were incorporated into the City's combined sewer system to regulate the flows that reach the interceptors and the WRRFs. As the City's sewer system was constructed since the early 1900s, almost five hundred regulators were installed to regulate the flow to 135 miles of interceptors and 14 WRRFs. Regulators allow all dry-weather sewage and some stormwater runoff to enter the interceptor. During times when the amount of flow due to wet weather exceeds the design capacity of the sewer system, combined sewage spills over a fixed weir inside the regulator, and into a local water body. These discharges, subject to certain conditions, are permitted under DEP's SPDES permits.

Most of the regulators are located along waterways. The outfall pipes from the regulators are only a short distance from the waterbody, while the tributary WRRF may be miles away. Consequently, depending on the length and/or intensity of the wet weather event, and consistent with the design of the collection system, overflows from regulators during storms can occur at outfall pipes some distance from the WRRF and long before the wastewater in a regulator's catchment area reaches the WRRF.

DEP has completed a number of CSO projects to convey more flow to the WRRFs as part of its CSO Program, and these projects include:

- Avenue V Pump Station – DEP certified completion in June 2012 of a project which increased the capacity of the pump station from 30 MGD to 80 MGD in conjunction with constructing a wet weather force main to convey this additional flow;

- Gowanus Pump Station – DEP certified completion in February 2015 of a project which increased the capacity of the pump station from 20 MGD to 30 MGD and constructed a new force main to convey the additional flow directly into the Columbia Street interceptor;
- Jamaica Bay Bending Weirs – DEP certified completion in June 2016 of the construction of bending weirs that reduce CSO discharges into Thurston and Bergen Basins and convey additional wet weather flow to the Jamaica WRRF upon completion of the new Bergen Basin lateral sewer.
- Newtown Creek Bending Weirs – DEP certified completion of the Newtown Creek Bending Weirs in November 2017; these bending weirs will reduce CSO discharges into Newtown Creek and will convey additional wet weather flow to the Newtown Creek WRRF.
- Bergen Basin Parallel Interceptor – DEP certified completion of the new Bergen Basin Parallel Interceptor in December 2017; this interceptor in conjunction with previously certified Jamaica Bay Bending Weirs will reduce CSOs into the Bergen and Thurston Tributaries and convey additional wet weather flow to the Jamaica WRRF.
- Flushing Bay Weir Modifications – DEP certified completion of the weir modifications of the high level weirs in June 2018; these modifications will reduce CSO discharges into Flushing Bay and convey more wet weather flow to the Bowery Bay WRRF
- Westchester Creek Weir Modifications – DEP certified construction completion for these two projects on September 21, 2020 and March 2, 2020, respectively. These modifications will convey more wet weather flow to the Hunts Point WRRF.

3.1 KEY REGULATOR MONITORING

Pursuant to the 2014 CSO BMP Order and 2015 SPDES permits, DEP undertook the Key Regulator Monitoring Program. Beginning in June 2014, DEP began submitting reports of all known or suspected CSO discharges from key regulators outside the period of a critical wet weather event. These reports provide itemized lists of such CSO discharges, the approximate start time and end time for each discharge, the corresponding WRRF flow rate, and the start time and end time of the critical wet weather event. Table 3.1 summarizes the observations of Key Regulators during CY2020.

Appendix 3.1 includes the Key Regulators Monitoring Report CY2020 Summary, which includes the details reported in the monthly reports sorted by regulator. Additionally, quarterly engineering analysis report submittals were required for the first year after the effective date of the Order and then, for each calendar year, as part of the Annual CSO BMP Report (see Section 14).

On February 1, 2016, DEP submitted the deliverable “Regulator(s) with CSO Monitoring Equipment Identification Program Report” to DEC. To generate that report, DEP undertook a 12-month Regulator Monitoring Program, from August 2014 through July 2015, of all regulators with CSO monitoring equipment. This requirement appears in the DEP WRRF SPDES permits, Additional CSO BMP Special Conditions, Appendix B, Item 5.c.

Table 3-1: Key Regulators with Potential CSO Discharges outside the Period of a Critical Wet Weather Event, January through December 2020

Key Regulator	2020 Number of Occurrences													Total Duration (hours)	Analysis Category
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	To Date		
26W-01	0	0	0	0	0	0	0	0	0	0	3	0	3	1.25	A
26W-02	0	1	2	0	1	1	2	0	2	0	5	1	15	26.25	A
BBH-02	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
BBH-06	1	5	1	2	1	0	2	4	1	1	2	1	21	4.25	C
BBL-04	0	2	2	4	0	4	4	5	5	1	5	2	34	18.25	C
BBL-22	0	0	1	1	0	1	0	3	1	0	0	0	7	2.25	B
HP-05	1	1	0	2	2	1	3	4	2	3	4	0	23	42.25	A
HP-10	1	0	0	2	1	1	2	0	1	0	1	0	9	7.25	B
HP-13	1	3	4	4	1	1	4	5	3	2	4	2	34	66.50	C
JA-03	1	0	1	0	1	0	4	3	4	1	2	0	17	10.50	A
NCB-01	0	1	0	2	1	3	2	2	2	2	5	1	21	9.75	C
NCB-04	0	2	2	1	1	5	2	3	2	2	2	1	23	33.25	C
NCM-47	0	0	0	0	1	1	1	4	2	2	4	1	16	27.75	C
NR-16	0	0	0	1	0	2	2	4	2	1	1	0	15	7.00	C
NR-23	0	0	0	1	0	1	4	4	1	0	0	0	11	5.25	B
NR-33	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
OH-01	1	1	1	0	0	0	0	0	2	0	0	0	5	6.25	B
OH-06	0	0	0	0	1	0	1	0	1	0	0	0	3	4.00	B
PR-06W	1	0	2	4	2	1	7	2	2	3	2	2	28	50.75	C
PR-13E	1	3	3	6	2	3	6	5	4	4	5	2	44	104.50	C
RH-02	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
RH-20	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
TI-09	1	3	3	3	1	0	2	4	2	2	6	3	30	48.50	C
TI-10A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
WIB-53	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
WIB-67	0	0	0	2	2	0	3	1	1	1	1	0	11	32.50	B
WIM-23	0	0	0	0	0	1	2	0	0	0	0	1	4	2.75	B
Count**	9	10	11	14	14	14	18	15	19	13	16	11	21		

**Count of regulators with at least one event

Analysis Categories:

- Category A: Key Regulators that may be influenced by planned capital improvements (Projects are currently in design or construction that may result in CSO reductions and additional wet weather capture);
- Category B: Key Regulators averaging one or fewer potential discharge outside the period of a critical wet weather event per month
- Category C: All other Key Regulators with an average of more than one potential discharge outside the period of a critical wet weather event per month

3.2 CRITICAL WET WEATHER EVENTS

The 2014 CSO BMP Order and the 2015 SPDES permits define a critical wet weather event as “a wet weather event which causes or would cause the influent flow at the WRRF to exceed the wet weather flow identified in the associated SPDES permit.” Generally, the wet weather flow identified in the associated SPDES permit of the WRRF is two times the design dry weather flow (2xDDWF), but it may be less than 2xDDWF under certain operational limitations (e.g., when DEP reports critical equipment is out of service and submits a reduced capacity request to DEC). CSO discharges from key regulators that occurred outside of a critical wet weather event were determined based on inference from synoptic data collected from the city telemetry system, meteorological and tidal observations, and plant operational data. Using InfoWorks CS models of the city’s collection system, DEP performs analysis of mitigation strategies to reduce the occurrence of discharges outside the critical wet weather periods.

Included in Appendix 3.2 is the CY2020 Critical Wet Weather Event Summary for each plant (January to December.) The summary tables include details related to the critical wet weather events for each plant, including: the event-specific wet weather capacity, plant throttling information, and the start and end times of the critical event with its corresponding maximum and average flows.

Additionally, DEP continued reporting, within the required two-hour time frame, events in which the WRRF throttled but never achieved the applicable SPDES-permitted wet weather capacity at any point during the period the WRRF throttled, except in instances when the WRRF was at reduced capacity in accordance with the Wet Weather Operating Plan and with prior approval by the DEC. DEP reported these events with Bypass Item Nos.

3.3 CRITICAL EQUIPMENT NOTIFICATIONS

In accordance with the 2015 SPDES permits, DEP continued notifying DEC whenever critical equipment is anticipated to be, or is, out of service for necessary repair or maintenance for more than 48 hours or under a DEC-approved schedule. Upon receipt of such notice, and on a case-by-case basis, DEC may adjust the flow that must pass through the WRRF in consideration of the recommendations contained within an approved WWOP. DEP based all subsequent required reporting, including determination of critical wet weather events, on the reduced wet weather capacity levels submitted in these critical equipment notifications.

3.4 WRRF Engineering Analysis

As per the 2014 CSO BMP Order, on August 6, 2014, DEP submitted to DEC Engineering Analyses of WRRF influent flow throttling operations. These analyses provided specific recommendations for initiation and cessation of wet weather flow throttling operations designed to maximize flow through the WRRF. Based on comments received from DEC, on December 12, 2014, DEP submitted supplements to the WRRF Engineering Analyses. These supplements included a brief summary of throttling protocol set points and indicators used to determine how and when throttling occurs at each WRRF.

3.5 Combined Sewer Overflows Annual Report Checklist Part III – CSO BMP's

Checklist Part III, Section 4, Maximize Flow to WRRF, Question 3 asks whether a plan and schedule have been submitted to DEC for addressing any inability during the past year of the headworks, primary treatment works, secondary treatment works and disinfection works to pass the flows specified in the permit for all wet weather flows. In 2014, DEP submitted Engineering Analyses of WRRF influent flow throttling operations and updated WWOPs pursuant to Appendix B, sections 2 and 4 of the CSO BMP Order, which provide recommendations for maximizing flow through the WRRFs.

For 26th Ward, interim wet weather flow limits were approved to facilitate completion of work required under the CSO Order, Appendix A, Section XII.K which includes rehabilitation of the existing four primary settling tanks and construction of a new primary settling tank.

3.6 Combined Sewage and Floatables Percent Capture at NYC WRRFs

DEP uses a calibrated InfoWorks Hydraulic Model in conjunction with NOAA rain gauge data, and plant operating and rain gauge information to calculate the annual percent wet weather capture. A detailed report on Combined Sewage and Floatables Percent Capture at DEP WRRFs is included in Appendix 3.

4 WET WEATHER OPERATING PLAN

"The permittee shall maximize treatment during wet weather events. This shall be accomplished by having a WWOP containing procedures and guidance for operating unit processes, including any regional CSO treatment/retention facilities listed in this permit. The WWOP requirements are provided in the Additional CSO BMP Conditions section of this permit."

"DEP shall maximize flow through the WWTP during wet weather events. This shall be accomplished by having a WWOP containing procedures and guidance for operating unit processes, including any regional CSO treatment/retention facilities listed in this permit. The goals of the WWOP are to provide operational guidance to WWTP staff for treating the maximum flows, while not appreciably diminishing effluent quality or destabilizing treatment upon return to dry weather operation. The WWOP will establish process control procedures and set points to maintain the stability and efficiency of the Biological Nitrogen Removal (BNR) process, if required, for the host WWTP. The WWOP shall be written in accordance with the DEC publication, Wet Weather Operating Practices for POTWs with Combined Sewers. DEP shall incorporate the throttling protocol and guidance developed during the CSO BMP Order, Pilot Study into the WWOP. The WWOP shall also include an update of the critical equipment lists for the WWTPs, which shall include screening facilities at pump station that deliver flow directly to the WWTP and at WWTP headworks. The updated WWOP shall be submitted to Region 2 for review and approval within 6 months. After approval by the Department, DEP shall implement and follow the terms of the approved WWOP, submitted on December 12, 2014."

A Wet Weather Operating Plan (WWOP) is required for each WRRF and CSO retention facility. Appendix 4 summarizes the most recent submittal to DEC of the WWOP for each WRRF. In accordance with the SPDES permit and the 2014 CSO BMP Order on Consent, in December 2014, DEP submitted to DEC an updated WWOP for each WRRF (see Appendix 4). Additionally, in accordance with the CSO Order on Consent, DEP re-submitted the WWOP for 26th Ward WRRF in October 2015 and again in March 2016 in response to DEC comments. DEP re-submitted the WWOP for Bowery Bay in March 2016 in accordance with the then-draft Omni Order. There were no modifications to the WWOPs submitted in 2020.

4.1 COMBINED SEWER OVERFLOWS ANNUAL REPORT CHECKLIST

Question 2, Section 5 Wet Weather Operating Plan (WWOP)

“In the past year, did treatment of wet weather flows cause any effluent violations or destabilize treatment upon return to normal service?”

DEP answer: Yes, there have been instances when wet weather flows have caused effluent violations; however, there have been no instances when wet weather flows have destabilized treatment upon return to normal service. Specifically, in the past year, DEP has reported effluent violations for parameters such as daily maximum total suspended solids (TSS) concentration at various WRRFs. Elevated flows due to wet weather can result in solids washout from the final clarifiers which can contribute to elevated fecal coliform counts or effluent TSS concentrations. Please refer to the monthly Discharge Monitoring Report submittals for specific information.

Question 7, Section 5 Wet Weather Operating Plan (WWOP)

“Does the plant identify the maximum flows through preliminary, primary, secondary treatment, tertiary, and disinfection units?”

DEP answer: “No.” The WWOPs identify the minimum flow capacity rates through the treatment units, not the maximum flow capacity.

5 PROHIBITION OF DRY WEATHER OVERFLOW

"Dry weather overflows from the combined sewer system are prohibited. The occurrence of any dry weather overflow shall be promptly abated and reported to the NYSDEC Region 2 Office within 24 hours. A written report shall also be submitted within fourteen (14) days of the time the permittee becomes aware of the occurrence. Such reports shall contain the information listed in 6 NYCRR Part 750-2.7."

Dry weather overflows from the combined sewer system are prohibited and DEP's goal is to reduce and eliminate dry weather bypasses. As a result of DEP's continuing efforts in this regard, in CY 2020, pump station and regulator bypasses continue to remain at low levels.

DEP promptly abates any dry weather overflow and reports it to DEC through the NY-Alert notification system within two hours of confirmation of the discharge. DEP also submits a written report to DEC within five (5) days of the confirmed time of occurrence.

A yearly comparison of regulators, pump stations and WRRFs' dry weather bypassing is attached in Appendix 5.

Dry weather bypasses from the NYC collection system during the reporting period totaled 0.49 MG, as listed in Appendix 5. This total includes discharges from other locations including outfalls and street locations. Bypasses from pump stations and regulators was 0.000030% (0.14 MG) of the total 454 billion gallons (BG) of dry weather flow treated by NYC's 14 WRRF's in CY2020.

Pump station and regulator failures that resulted in dry weather bypassing during CY 2020 were categorized by cause and grouped by cause code. Major causes were further sub-coded and identified in more detail. These bypasses were analyzed for trends at particular locations and, as a result, DEP is studying specific locations for improvements or modifications to reduce future bypassing.

5.1 PUMP STATION DRY WEATHER BYPASSING AND ANALYSIS

On May 9, 2020, DEP personnel responded to a feeder failure alarm indicating a loss of power to the 154th Street Pumping Station feeder. The power outage was determined to be caused by a downed powerline. A backup Godwin pump, located onsite started automatically and continuously pumped during the event. DEP personnel adjusted the pump speed to improve efficiency; however, the pump was unable to handle all of the flow entering the station, resulting in a partial bypass. Approximately 3,800 gallons of raw sewage were discharged into Powells Cove.

On June 20, 2020, there was a raw sewage bypass caused by a programmable logic controller (PLC) failure at the Hannah Street Pumping Station, resulting in a discharge from Regulator PR-13E into the Upper New York Bay. The incident caused a bypass of approximately 50,000 gallons.

On August 4, 2020, during Tropical Storm Isaias, DEP personnel responded to a feeder failure alarm indicating a loss of power to the Canterbury Avenue Pump Station. Con Edison (Con Ed) had multiple power lines down in Staten Island due to high winds and fallen trees. DEP personnel dispatched an emergency generator to the pump station and placed it into operation at approximately 3:00 PM. However, once the pump station was powered up, the main sewage pumps (MSPs) would not restart. Electricians were deployed to the pump station to troubleshoot the problem. The Canterbury Avenue Pump Station is a sanitary station and does not have an emergency overflow. As the wet well level increased, a 4" hydraulic pump from a nearby site was brought in to pump out the elevated wet well in order to prevent sewer backups into area homes. There were no sanitary sewers in the area to pump into, so the 4" hydraulic pump had to be temporarily connected to a nearby storm sewer. The incident caused a bypass of approximately 225 gallons.

5.2 Regulator Dry Weather Bypassing and Analysis

On May 16, 2020, DEP personnel from Tallman Island Collections Facility North discovered a raw sewage bypass during an inspection of TI-Regulator No. 57, located at 127-01 134th Street, College Point, NY. They determined that this bypass was caused by a blockage due to a large amount of grease buildup in the branch interceptor line. Approximately 64,800 gallons of raw sewage were discharged into Flushing Bay.

On September 22, 2020, DEP personnel responded to a 311 report of a possible dry weather discharge at South 8th Street and Kent Avenue in Brooklyn. Upon investigation, Regulator NCB-05A was found to be partially blocked by a piece of asphalt, which caused a raw sewage bypass to outfall NCB-082 discharging into the East River. Approximately 9,640 gallons of raw sewage were discharged into the East River.

On September 29, 2020, DEP personnel responded to a manhole overflow complaint and upon arrival on site, Collections confirmed that there was a dry weather discharge at South 8th Street and Kent Avenue in Brooklyn. Upon investigation, the channel in regulator NCB-05A was found to be blocked by large pieces of asphalt, which caused a raw sewage bypass to outfall NCB-082 discharging into the East River. Approximately 1,100 gallons of raw sewage were discharged into the East River.

On December 11, 2020, DEP personnel discovered a blockage at Regulator TI-57 that caused a raw sewage bypass to Outfall TI-57 discharging into the Flushing Bay. Approximately 4,360 gallons of raw sewage were discharged into Flushing Bay.

5.3 WRRF Dry Weather Bypassing and Analysis

There were no raw sewage bypasses from the WRRFs during FY2020.

5.4 Other Locations Dry Weather Bypassing and Analysis

On January 26, 2020, DEP personnel discovered the 6-inch pump in the pump-around system located at the intersection of 146th Street and Sutter Avenue was activated. Upon investigation, it was determined that a malfunctioning level sensor was the cause of the pump activation whereby approximately 90,000 gallons of untreated sewage entered Bergen Basin.

On March 19, 2020, DEP's sewer maintenance crew responded to a homeowner complaint of a sewer backup at the location. The backup was caused by a grease blockage in the city sewer. The homeowner pumped the sewage from a 1.5-inch pipe in his basement into the street which ran along the curbside and into a 54-inch storm sewer catch basin located on the northeast corner of 58th avenue and Kissena Boulevard. The incident caused a bypass of approximately 100 gallons.

On April 20, 2020, in response to call from a citizen, DEP discovered water flowing onto the Grand Central Parkway Eastbound Exit 12 ramp. Upon discovery, a crew began to check for the source of water. Upon investigation it was determined that a longitudinal break on the bottom of a 10-foot length of the force main pipe from the 70th Road Pumping Station was the source of the leak. Untreated sewage was flowing onto the roadway and into a storm catch basin, which ultimately discharges to Willow Lake/Flushing Creek. DEP personnel confirmed with a dye test that sewage was flowing to the storm catch basin. The incident caused a bypass of approximately 233,000 gallons.

On June 25, 2020, DEP responded to a complaint of potential sewage runoff into the Ravine Trail in Udall Cove Park Preserve. Upon inspection, DEP staff identified runoff into Gabler's Creek from a sewer manhole that appeared to be cemented over. Gabler's Creek flows to Little Neck Bay. DEP staff took samples of the discharge from the side of the concrete structure to test for fecal coliform. At the time when the crew identified the flow, the runoff type was not determined. The sampling results were received on June 29, 2020; confirming the presence of untreated sewage in the flow from the manhole. The incident caused a bypass of approximately 26,000 gallons. Appendix 5 provides additional details on the events, yearly comparisons and Reports of Non-Compliance Events.

6 INDUSTRIAL PRETREATMENT

"The approved Industrial Pretreatment Program shall consider the impacts of discharges of toxic pollutants from unregulated, relocated, or new SIUs tributary to CSOs that were not identified in the report entitled, 'CSO Abatement in the City of New York: Report on Meeting the Nine Minimum CSO Control Standards'. The approved Industrial Pretreatment Program shall consider CSOs in the calculation of local limits for indirect discharges. Discharge of persistent toxics upstream of CSOs will be in accordance with guidance under (NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.3.8, New Discharges to POTWs. For industrial operations characterized by use of batch discharge, consideration shall be given to the feasibility of a schedule of discharge during conditions of no CSO. For industrial discharges characterized by continuous discharge, consideration must be given to the collection system capacity to maximize delivery of waste to the treatment plant. Non-contact cooling water should be excluded from the combined system to the maximum extent practicable. Direct discharges of cooling water must apply for a SPDES permit. To the maximum extent practicable, consideration shall be given to maximize the capture of industrial waste containing toxic pollutants and this wastewater should be given priority over residential/commercial service areas for capture and treatment by the POTW. These factors shall be considered in the location and siting of new industrial users with preference to service by areas not tributary to CSOs or having sufficient capacity to deliver all industrial wastewater during all conditions to the POTW. These provisions apply to both new and existing industrial users"

This program continues as described in last year's Report. During 2020, DEP performed 303 inspections of regulated industries, and issued 29 summonses.

Attached in Appendix 6, Exhibit 1 is a copy of the letter sent to industrial users (IU) informing them that their permits had been amended, and a graph of annual trends in discharges to NYC WRRFs that contain metals. The total amount of metal being discharged by regulated industries remains very low. In 2020, the average daily discharge containing metals by all regulated industries to the NYC WRRFs was 8.7 lb/day. This amount corresponds to a trend of declining IU discharges. If the same percentage of CSO bypass (1.5%) from the CSO report is applied to the 2020 data, then on average approximately 0.12 lb./day of total metal would be included in CSO dry weather overflows.

Between 1997 and 2020, the total amount of metal being discharged by regulated industries in the City has been reduced by more than two orders of magnitude, due primarily to the relocation to Asia of the electroplating industry. The total metals loadings for 1997–2009 and 2012 were calculated based on monthly metal sampling, and the remaining years were calculated based on annual priority pollutant scans. For a complete

description please see CY2009 CSO BMP Annual Report. A list of regulated industries, with average daily wastewater discharge flows and average pollutant loadings is summarized in the 2020 IPP Progress Report.

6.1 Requirement for Significant Industrial Users to Hold Their Process Wastewater and Non-contact Cooling Water to the Maximum Extent Practicable During Heavy Rains

As an alternative means to reduce the likelihood of CSOs during storm events, DEP requires regulated industries to hold their process wastewater and non-contact cooling water to the maximum extent practicable during heavy rains. In 2020, DEP continued to implement this requirement for Significant Industrial Users (SIUs). Please see the CY2009 CSO BMP Annual Report for more details about this program. Additional information may be found in Appendix 6.

7 CONTROL OF FLOATABLE AND SETTLEABLE SOLIDS

The discharge of floating solids, oil and grease, or solids which cause deposition in the receiving waters, is a violation of the NYS Narrative Water Quality Standards. The permittee shall implement the following best management practices in order to eliminate or minimize the discharge of these substances:

*7a. **Catch Basin Repair and Maintenance -** The permittee shall inspect each catch basin in the tributary collection system a minimum of once every 36 months in accordance with a schedule to be outlined in the first annual CSO BMP report. Catch basins will be cleaned as required based on these inspections and in accordance with the permittee's criteria for catch basin cleaning. The permittee shall replace missing or damaged catch basin hoods within 90 days after the date of inspection for basins known to be hooded upon completion of the catch basin hooding program. For all future catch basins in the tributary collection system found by inspection to require extensive repairs before a hood can be installed, the permittee shall repair and install a hood within 24 months.*

*7b. **Booming, Skimming and Netting -** "The permittee shall operate and maintain the floatable containment boom (or floatable containment netting) as applicable for the CSO outfalls listed in this permit. The in-water containment boom shall be inspected within 48 hours of a confirmed CSO event and, if necessary, cleared of floating debris. The permittee shall visually inspect floatable containment netting on a weekly basis and shall replace damaged or full netting bags as necessary."*

*7c. **Institutional, Regulatory, and Public Education –** The permittee shall continue to implement the City-Wide Floatables Plan.*

The permittee may submit an application to the Department for an alternative implementation schedule for Items 7. a and b. for combined sewer areas that are tributary to a permanent land based CSO abatement and treatment facility designed and permitted by the Department for control of floatables.

7.1 CATCH BASIN REPAIR AND MAINTENANCE

Catch basin maintenance and repair work is a major focus of DEP's daily activities. DEP devotes significant resources to these tasks both as part of its three-year programmatic inspection cycle in compliance with the SPDES permits, and in response to complaints received from the public.

DEP now tracks catch basin maintenance and repair activities through Infor Public Sector (IPS), a complaint and work order management system. DEP performed 59,489 programmatic catch basin inspections in 2020. Table 7.1-1: “CY 2020 Catch Basin Inspection & Cleaning” presents a summary of catch basin cleaning as a result of the inspection program and other routine maintenance activities for each borough.

Catch basin hooding, one of EPA’s Nine Minimum Controls, is an important element of DEP’s CSO floatables control program and can significantly reduce the discharge of street litter to combined sewers, storm sewers and receiving waters. In 2020, DEP hooded 2,124 catch basins; 765 of those were found to require extensive repairs before a hood could be installed and the work took on average 75 days. The rest (1,359) were installed within an average of 53 days, with 81% being completed within the 90 days. Table 7.1-2: CY 2020 Catch Basin Hooding, summarizes catch basin hooding during 2020 for each WRRF drainage area. The status of these basins is monitored through DEP’s IPS system to ensure compliance within the allotted time period.

7.2 BOOMING, SKIMMING AND NETTING

BWT maintains 22 permanent floatable containment facilities and 1 temporary for a total of 23, corresponding to storm water and combined sewer drainage areas totaling approximately 60,000 acres. The temporary CSO boom at the Gowanus Canal is also handled by BWT. Floatable containment site locations and offloading facilities are depicted in Figure 7-2. The off-loading facility for floatables at Whale Creek is back in service.

The floatable materials contained by the boom and net sites are retrieved by three, City-owned skimmer vessels. Offloading currently occurs at three DEP WRRFs. The skimmer vessels are operated by BWT marine title personnel. The personnel also provide containment site inspections, maintenance and repair. Skimmer vessel maintenance and repair services are handled either by in-house personnel or, when necessary, via a marine services contract.

Skimmer vessels are dispatched to retrieve collected floatables from booms and nets based on inspections conducted with small vessels within 24 to 48 hours of significant rain events. The small, inspection vessels are also equipped with hand netting tools in order to retrieve small accumulations of floatables, so that the skimmer vessel use is more focused on containment sites with large amounts of floatables. In dry weather, boom and net inspections occur at least weekly and may occur more often for certain sites where specific tide and wind conditions may cause debris to accumulate outside of rain events.

In 2020, about 444.75 cubic yards of floatable material were retrieved from the 23 containment facilities and some minor open water skimming (see Table 7.2-C). Total

floatable recovery per each year is provided in Figure 7.2-B and in Appendix 7.2.1, Table 7.2-A. Floatable recovery totals for 2020 per each of the boom and net sites are included in Appendix 7.2.2, Table 7.2-B.

Figure 7-4. DEP Skimmer Vessel "Shearwater"

DEP currently has two self-propelled skimmer vessels (Aquarius Systems Custom Model HSTH235 - High Speed Trash Hunter) and one old vintage skimmer vessel which must be towed. DEP relinquished 1 vessel in April 2019 and is currently procuring a new vessel.

Table 7.2-D reflects NYCDEP CSO Floatable Removal Program via Skimmer Vessels – Collection Summary (Cubic Yards).

7.3 Institutional, Regulatory, and Public Education Controls

In 2020, DEP continued, in partnership with other City agencies, to implement a variety of institutional, regulatory, and public education controls. For a detailed description and history of the City's work to reduce trash and settleable debris on a citywide basis, please refer to prior CSO BMP Reports available at https://www1.nyc.gov/site/dep/water/combined-sewer-overflows.page and the NYC Stormwater Management Program available at www.nyc.gov/dep/ms4.

7.3.1 Public Engagement - 2020 Activities

In 2020, DEP continued to educate the public and raise awareness about the New York City wastewater treatment and water supply systems, stormwater management (including the MS4 permit, floatables reduction, litter reduction, the proper disposal of grease, and water conservation). DEP developed and implemented through its Bureau of Public Affairs & Communication (BPAC), a comprehensive education and outreach program featuring in-person and virtual formats:

- Public meetings for the East River/Open Waters Long Term Control Plan
- School programs (grades pre-K-college graduate)
- Education programs for professional organizations
- Visitor Center at Newtown Creek programs
- Professional learning opportunities for formal and non-formal educators
- Special education programs and events
- Public exhibitions
- Volunteer Programs
- Multi-media distribution
- Publications
- Promotional items
- Website updates

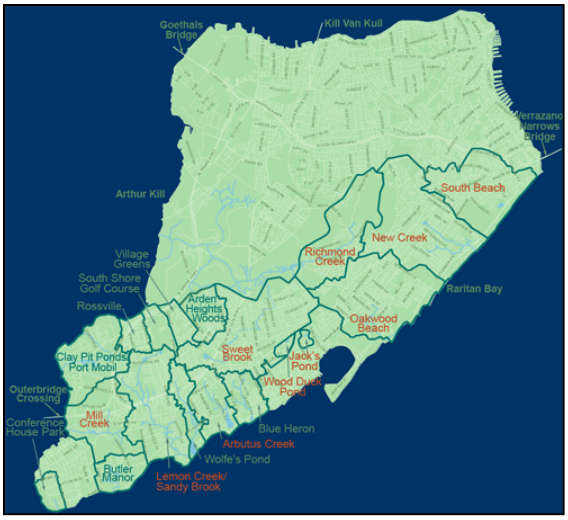
In 2020, the City continued its annual “Clean Streets = Clean Beaches” Campaign, which featured an informational poster with the slogan “Don’t Mess up Summer” for display at area beaches, on Department of Sanitation fleet vehicles and on City agency social media.

Through coordination with other city agencies, including the New York City Departments of Sanitation and Parks & Recreation, the public engagement program not only increased the public’s awareness of the impact of littering, but also directly reduced litter through community cleanups and reduced rainfall runoff through tree planting, all of which work to reduce CSOs and their impacts on New York Harbor

7.3.2 Development of BMPs for the Automotive Industries

DEP completed the automotive booklet in 2013. For a full description of this work, please see the CY 2012 CSO BMP Annual Report.

7.3.3 Control of Floatables in Bluebelts



Development of a New Creek, South Beach, and Oakwood Beach Bluebelt: In 2020, DEP construction continued at New Creek BMPs NC-11 and NC-12. Negotiations with the US Army Corps of Engineers were nearly completed in 2020, and it is anticipated that the remaining Mid-Staten Island BMPs in the Oakwood Beach, New Creek, and South Beach areas will be constructed within the next three years as part of the South Shore Staten Island Coastal Storm Risk Management program.

BMPs at Mill Creek (MC-3) and Jack's Pond (JP-1, JP-2, JP-3, and JP-4) were completed in 2020.

Adopt-a-Bluebelt – This program continued in 2020. The total number of sites adopted and maintained by local community groups, companies, or individuals is 46, covering an area of 46,000 square feet.

Volunteer Cleanups – In 2020, there were no volunteer cleanups due to constraints imposed by the pandemic.

Catch Basin Outreach and Education – All existing and newly-installed catch basins that are tributary to Bluebelts are marked with the "No dumping – flows to Bluebelt" message.

Floatables Control – New dynamic detention weirs with trash capturing devices have been installed in the New Creek Bluebelt. These weirs have eliminated the need for floating booms.

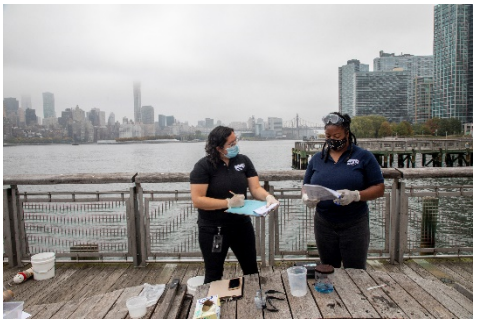
Illegal Dumping Enforcement – DEP Bluebelt division continues to utilize and manage a debris removal contract for the purposes of removing illegal dumping and other debris found on existing and newly-acquired DEP-owned Bluebelt properties. During the reporting period, Bluebelt staff and contractors removed 482 cubic yards of dumped trash and 195 cubic yards of sediment within and adjacent to regulated wetlands.

7.3.4 School and Visitor Center Programs, Professional Development, Special Events and Exhibitions

DEP manages an extensive education and outreach program that targets NYC students, teachers, parents, school administrators, curriculum specialists, non-formal educators, residents, community organizations, businesses, and visitors and internet users. The program is supported through education programs at the Visitor Center at Newtown Creek and the Newtown Creek Nature Walk, education classes taught at schools and public events, digital resources and print material, multi-media public service campaigns, exhibitions, publications, promotional item distribution, and the DEP website.

BPAC's education programs and resources continued to reach thousands of young people and adults in 2020. Some specific examples of these programs that occurred in 2020 are presented below.

7.3.4.1 Other Education Programs and Resources



In 2020, DEP conducted hundreds of educational programs with young people and adults through both in-person and virtual school visits, field trips, Visitor Center at Newtown Creek presentations, teacher professional learning opportunities, and other educational programs and events. DEP developed and distributed to thousands of recipients throughout NYC educational materials, including information about NYC's wastewater treatment and water supply systems and about harbor water quality; teacher lessons and student activities; and educational resource guides. Of particular interest to teachers was a new educational brochure with graphics depicting the wastewater treatment process, stormwater management, and wastewater resource recovery in NYC. DEP, in collaboration with the NYC Mayor's Offices of Resiliency and Sustainability, also developed a new Climate Change Education Module, featuring a comprehensive set of lessons, activities, and resources on climate science and impacts in NYC. . Detailed

information about these programs and resources is available from BPAC's Education Office and on DEP's website.

The Visitor Center at Newtown Creek, located at the Newtown Creek WRRF in Greenpoint, Brooklyn, provides an important venue for students, educators, professionals working in the field, and the general public to learn about NYC's wastewater and water supply systems and stewardship opportunities. Exhibitions and programs focus on the city's vital, but hidden, infrastructure; green solutions to stormwater management, including bluebelts, rain gardens, green and blue roofs, and rain barrels; the NYC sewer system, including its MS4; harbor water monitoring, including the role of NYC's fleet of vessels and scientific monitoring; and ways to become more effective stewards of the environment by disposing of litter and grease properly and by conserving water. The Visitor Center provides the ideal setting for DEP educators to present hands-on, multi-disciplinary lessons for grades pre-K through college, aligning with New York State and City standards, and STEM and humanities initiatives. The Visitor Center (and the Newtown Creek Nature Walk), open year-round, is a popular destination for school field trips and teacher professional learning opportunities. In 2020, DEP continued to engage students and educators through virtual tours and presentations at the Visitor Center at Newtown Creek WRRF using video interviews, in-the-field footage, and interactive remote learning activities.

In May 2020, DEP conducted its 34th annual Water Resources Art & Poetry award ceremony to recognize student's knowledge of the city's valuable water resources through their creative expression using art and poetry. Approximately 1,700 NYC and watershed students from 2nd through 12th grade attending public, charter, independent, and parochial schools, and home-schooled, participated in this special program; their poetry, photographs, digital art, paintings, and crafts were judged based on knowledge and creativity. Winning entries are featured on DEP's website. DEP hosted a virtual celebration to honor the outstanding efforts of all of the participating students.

In 2020, DEP continued to collaborate with Trout Unlimited on the Trout in the Classroom (TIC) program, an upstate/downstate watershed environmental education initiative for elementary through high-school students. In October, educators from NYC and NYC's watersheds east and west of the Hudson River attended the annual TIC teacher

conference, where they received trout eggs, distributed by the NYS Department of Environmental Conservation (DEC), to raise in their classrooms. Throughout the eight-month program, eggs hatched in classroom tanks and trout were raised by approximately 20,000 students in more than 150 schools in NYC and its watersheds. In the spring, NYC students and teachers released their trout into watershed streams and participated in in-person and virtual hands-on activities focused on the importance of forests in helping to protect water quality and in water stewardship.

DEP also participated with DEC during the annual statewide Citizen Science "A Day in the Life of the Hudson and Harbor" program. Because of COVID-19, this event took place remotely. DEP and other harbor water educators filmed in-the-field footage, making environmental observations, collecting and analyzing water samples, and assessing water quality along the East River at Gantry Plaza State Park. Videos were shared with hundreds of students and educators to support their learning of field techniques used to track the river's tides and currents, examine the water's chemistry and identify local aquatic species.

Throughout the year, DEP conducted professional learning opportunities (PLO) for formal and non-formal educators. Topics included harbor water quality, watersheds, stormwater management, wastewater resource recovery, and the history of the New York City water supply system. Partners included the NYC Department of Education's (DOE) Science and STEM units and Office of Sustainability, DOE Genovesi Environmental Study Center, New York City DPR, New York City Department of Sanitation (DSNY), New York City Mayor's Offices of Resiliency and Sustainability, Watershed Agricultural Council, NYC H2O, National Wildlife Federation, and many other cultural and environmental organizations. Participants learned about creative ways to incorporate into the curriculum teaching and learning about water. Some 2020 highlights include DEP's popular Wastewater Resource Recovery in NYC PLO for more than 50 educators at the Visitor Center at Newtown Creek, a NYC Watershed Virtual Tour attended by more than 40 non-formal educators, and a Climate Change Education Virtual Workshop Series hosted for more than 30 educators over three sessions. As a Continuing Teacher and Leader Education (CTLE) sponsor, as approved by the New York State Education Department, DEP continued to support New York State teachers who participated in our PLOs by providing credit towards their required training hours.

7.4 FLOATABLES MONITORING PROGRAM PROGRESS REPORT

DEP has been tasked through its SPDES permit requirements to implement and maintain a floatables control program and a monitoring program to provide a means to assess and measure the effectiveness of the programs. These control and monitoring programs are embodied in the City-Wide Comprehensive CSO Floatables Plan Modified Facility Planning Report (Floatables Plan, July 2005) inclusive of Addendum 1 – Pilot Floatables Monitoring Program Work plan (December 2005)

The Floatables Plan contains a conceptual framework for the monitoring of floatables conditions in the waters of New York Harbor. A pilot program was conducted over the course of 2006 and 2007 to develop and test the monitoring methodology envisioned in the framework, and the full program began in 2008. A progress report, presented in conjunction with the CSO BMP Annual Report under separate cover, describes the progress that DEP has made.

The floatables monitoring program is based on observations of the presence/absence of floatables from monitoring stations throughout the harbor and has developed into one of a number of methods to assess floatables control programs. These basic monitoring data have been used to prioritize and select sites for more comprehensive site-specific investigations focused on priority sites with persistent poor ratings. The site-specific investigations characterize floatables, identify sources of floatables, correlate rating trends to floatables control programs where applicable, and, in conjunction with CSO LTCP processes, provide the first steps for appropriate remediation planning where feasible.

In addition to the floatables controls listed in BMP 7a through 7d, the City engages in a street sweeping program to reduce floatables' entry into catch basins and the combined sewer system. The program is administered by DSNY and evaluated through systematic street litter monitoring, known as the "Scorecard Program," conducted by the Mayor's Office of Operations. According to the Scorecard Program, City-wide street litter levels have improved somewhat since 2003 with clear improvements in the percent acceptable and percent filthy ratings. Scorecard Program results for the past forty four years are summarized in Appendix 7.4.

8 COMBINED SEWER SYSTEM REPLACEMENT

"Replacement of combined sewers shall not be designed or constructed unless approved by NYS Department of Health and specified in the NYCDEP Master Plan for Sewers and Drainage. When replacement of a combined sewer is necessary it shall be replaced by separate sanitary and storm sewers to the greatest extent possible. These separate sanitary and storm sewers shall be designed and constructed simultaneously but without interconnections to maximum extent practicable. When combined sewers are replaced, the design should contain cross sections which provide sewage velocities which prevent deposition of organic solids during low flow conditions."

Private Drains are constructed in conformance with Drainage Proposals. Any sewers built by private developers are in conformance with their Drainage Proposals and do not extend combined sewers beyond the combined sewer area.

9 COMBINED SEWER/EXTENSION

"Combined sewer/extension, when allowed should be accomplished using separate sewers. These sanitary and storm sewer extensions shall be designed and constructed simultaneously but without interconnections. No new source of storm water shall be connected to any separate sanitary sewer in the collection system. If separate sewers are to be extended from combined sewers, the permittee shall demonstrate the ability of the sewerage system to convey, and the treatment plant to adequately treat, the increased dry-weather flows. Upon written notification by the Regional Water Engineer, the permittee shall assess the effects of the increased flow of sanitary sewage or industrial waste, on the frequency, flow and pollutant loading on the CSOs including the impacts on the receiving water quality and usage. This assessment should use techniques such as collection system and water quality modeling contained in the Water Environment Federation Manual of Practice FD-17 Combined Sewer Overflow Pollution Treatment."

In 2020, eight private combined sewer extensions were reviewed and approved and one previously approved private combined sewer extensions in Brooklyn completed construction. Sewer extensions are reviewed and approved in accordance with the City drainage plan.

10 SEWER CONNECTION & EXTENSION PROHIBITIONS

"If, there are documented, recurrent instances of sewage backing up into house(s) or discharges of raw sewage onto the ground surface from surcharging manholes, the permittee shall, upon letter notification from DEC, prohibit further connections that would make the surcharging/back-up problems worse. Wastewater connections to the combined sewer system downstream of the last regulator or diversion chamber are prohibited."

For the calendar year 2020, DEP received no letter notification from DEC concerning chronic sewer backups or manhole overflows that would prompt DEP to prohibit additional sewer connections or sewer extensions

11 SEPTAGE AND HAULED WASTE

"The discharge or release of septage or hauled waste upstream of a CSO is prohibited."

The septage and hauled waste program continued unchanged since the 2019 Annual BMP Report issued in 2020.

12 CONTROL OF RUN-OFF

"All sewer certifications for new development shall be consistent with NYCDEP rules and regulations and shall require on-site detention or retention to not exceed the capacity of the existing sewers fronting the property. Only allowable flow will be permitted to discharge into the combined or storm sewer system."\

Connecting to or repairing/relaying an existing connection to any combined, storm or sanitary sewer requires a permit from DEP. A new connection is conditioned upon the submission of a Certification of a Site Connection Proposal (SCP) or a House Connection Proposal (HCP). A NYC Licensed Master Plumber can apply for a sewer connection permit provided there is a certified HCP/SCP submitted by a NYS Licensed Professional Engineer or Registered Architect.

BWSO oversees the sewer permitting process and inspects and approves water and sewer connections performed by licensed plumbers and/or authorized contractors. This oversight and the review of certifications of SCPs and HCPs allow DEP to ascertain whether the volume of sewage entering the collection system conforms to the City's Drainage Plan and will be conveyed to WRRFs without causing sewage back-ups.

DEP administers this program pursuant to the Clean Water Act and State and local laws regulating the treatment and disposal of wastewater. The City's "Rules Governing House/Site Connections to the Sewer System" are set forth in Title 15 of the Rules of the City of New York, Chapter 31.

Connections to any City sewer require DEP (BWSO) inspection, generating a "connection card" or "Certificate of Inspection." Such certification is a prerequisite to the property owner's receiving a Certificate of Occupancy from the NYC Department of Buildings (DOB). BWSO's Borough Water & Sewer Records Office maintains records of all connections.

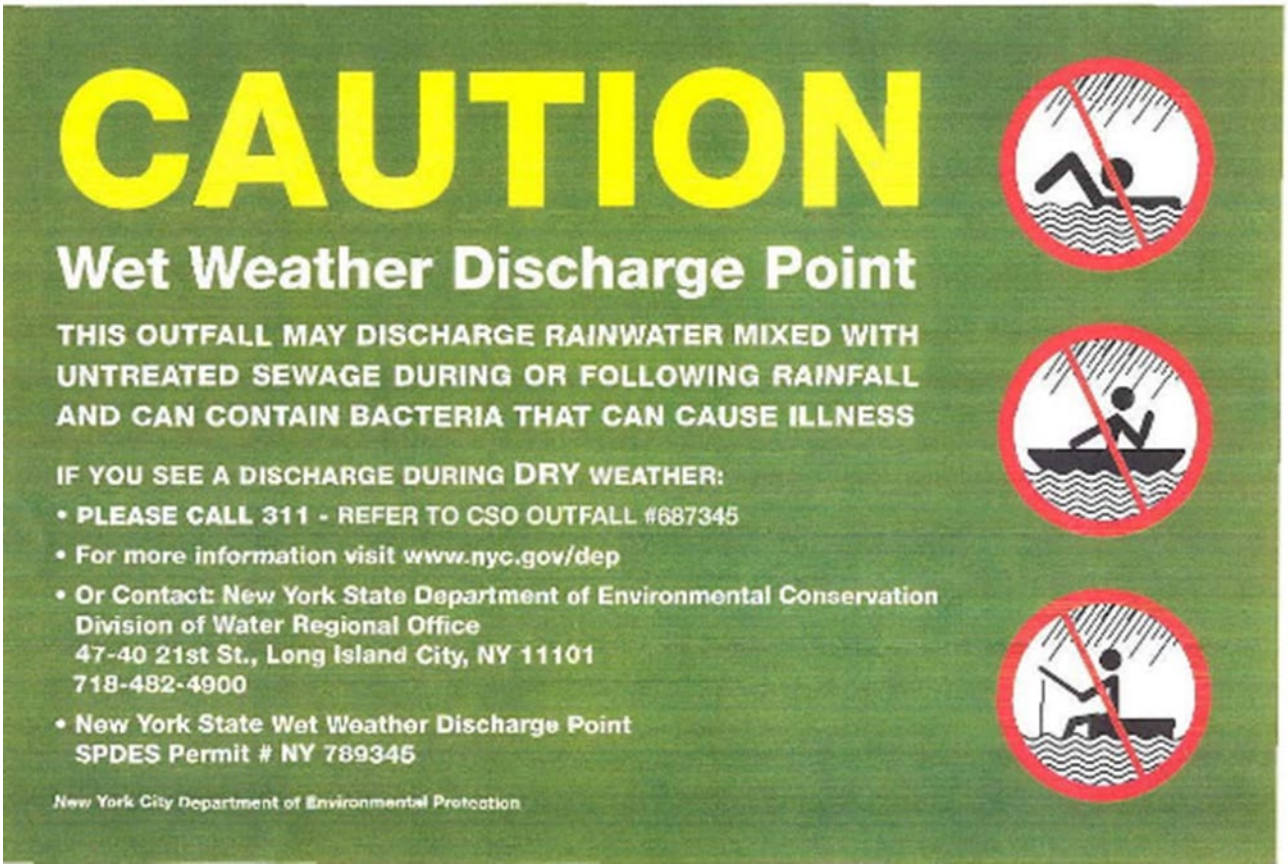
The Chapter 31 rule to "reduce the release rate of storm flow to combined sewers from new developments to 10% of the drainage plan allowable or 0.25 cfs, whichever is higher (for cases when the allowable storm flow is more than 0.25 cfs)," was promulgated on January 4, 2012, and has been in effect since July 4, 2012.

A copy of the Sewer Certification Form and Site Connection Proposal Form that must be filed for new development are attached in Appendix 8.

13 PUBLIC NOTIFICATION

a. " The permittee shall install and maintain identification signs at all CSO outfalls owned and operated by the permittee as listed on the Additional Combined Sewer Outfall page(s) of this permit. The permittee shall place the signs at or near the CSO outfalls and ensure that the signs are easily readable by the public. The signs shall have minimum dimensions, information and appearance as specified in the Discharge Notification Requirements page of this permit."

DEP installed signs at all CSO outfalls in 2003. Under the project "Signs Installation Plant-Wide," initiated in November 2005, DEP installed signs at all WRRF outfalls in 2007. The sign panels are 24" x 36" and the plaques are 6" x 9" with white letters on a green background. Each notification sign and plaque asks the public to contact DEP with the depicted Outfall number and SPDES number if they observe dry weather discharge from the outfall.



In 2010, DEP changed the design of the outfall signs at the recommendation of the Floatables Citizens Advisory Committee which requested that we include specific information about the water quality at these locations. The new design was approved by DEC, the Arts Commission and DPR, as well as Community Boards in the five boroughs. Recommendations were made to include warnings about recreational activities such as swimming, boating and fishing at the outfall locations. The new design emphasizes the word “Caution” in order to alert the public to the fact that the location is a point of release of wastewater into surface water during wet weather. The signs also provide graphics of non-recommended activities. The replacement of the signs was completed in May of 2011 with the newly designed CSO signs; see Appendix 10 for the list of installed CSO sign locations.

The signs also provide contact numbers people can call to report discharges during dry weather. The ID number can help a 311 operator or a DEP employee to recognize the location from which someone is reporting discharges and to take immediate action. DEP has received calls prompted by these signs. These calls are handled by a trained group of employees who are aware of related response actions. Calls are evaluated and forwarded to responsible staff who will take the appropriate action.

The knowledge of New York's citizens about their water environment is being expanded with posting of DEP's educational signs. The notice depicts a typical CSO sewer regulator, explains its purpose, and alerts the public to action to be taken in the event of a release of wastewater from an outfall into surface waters during dry weather. The sign also serves a secondary purpose: it involves the citizen in community environmental actions.

Communication with Community Boards was essential to inform them that DEP would be working in their areas in response to the "Fisherman's Right to Know" mandate. The purpose of the Act was explained and specific contact points within DEP were established.

"Waterwalk" Educational Signage

> *b. "The permittee shall implement a public notification program to inform citizens of the location and occurrence of CSO events. As long as the Department of Health and Mental Hygiene provides a "Your location" public notification program, the permittee may submit a summary of the program in the annual BMP report, rather than developing their own program. The program shall include a mechanism (public media broadcast, standing beach advisories, newspaper notice etc.) to alert potential users of the receiving waters affected by CSOs and a system to determine the nature and duration of conditions that are potentially harmful to users of these receiving waters due to CSOs. "*

The DOHMH *2020 NYC Beach Surveillance and Monitoring Report* can be accessed at:

https://www1.nyc.gov/assets/doh/downloads/pdf/beach/beach-report-2020.pdf

13.1 Summary of DOHMH Report:

13.1.1 Routine Monitoring and Surveillance Procedures

The routine beach monitoring and surveillance procedures consist of the following three major components:

- Routine beach water quality monitoring;
- Compliance inspections; and
- Regulatory surveillance.

DOHMH monitors and samples each beach weekly with the exception of the Rockaway and Breezy Point beaches, which are sampled biweekly. Additional samples may be collected when necessary. The determining factors for additional sampling may include:

- Proximity to suspected pollution sources;
- Extent of pollution;
- Beach use;
- Historical water quality data; and
- Other health risk factors.

Prior to sample collection, a visual inspection is performed to identify any existing and/or potential sources of pollution that are likely to affect beach water quality. During a sample event, three samples are collected at each beach. At larger beaches, such as Coney Island and Rockaway, additional samples are taken at multiple locations to ensure adequate representation and reliable data results. Water samples are collected at knee-depth (18 inches) in three feet of water, at the middle of a typical or most highly used area of the beach, or near a potential source of pollution. The collected samples are delivered to the DOHMH Office of Public Health Laboratories (PHL) for analysis. The analytical turnaround time for Enterococci is 24 hours.

13.1.2 Public Notification and Risk Communication

There are 8 public beaches, all of which were issued at least one swimming advisory warning notice during the 2020 bathing season. However, there were only two warnings issued as a result of water quality exceedances. Fourteen notifications days were a result of preemptive wet weather or tropical storm conditions. The length of notification ranged from 1 to 2 days.

Of the 17 private beaches in NYC, 13 were open in 2020. Nine were issued at least one swimming advisory warning notice during the bathing season. Of the private beaches that exceeded water quality standards, there were 139 warning days, 72 of which were a result of a contamination advisory on Douglaston Manor beach only. The other 67 warning days were a result of wet weather conditions, when the length of the notifications ranged from 1 to 2 days. See Appendix B on pages 18 to 20 of the Beach Report 2020.

In response to storm warnings from the National Weather Service, all eight public beaches were preemptively closed to swimming on Tuesday, August 4, ahead of the landfall of Tropical Storm Isaias. All public beaches were closed for the season on September 7 (Labor Day), 2020.

13.1.3 Water Quality and Illness Reporting

Routine water quality monitoring and sample collection were performed at all 25 permitted beaches. Over 300 samples were collected and analyzed from these beaches between April and September 2020. In 2020, the Department received two complaints in July regarding a potential illness caused by beach recreation activity at the Bronx private beach, Schuyler Hill Civic Association. These complaints were referred to the Bureau of Communicable Disease epidemiologists for follow-up investigation. After multiple attempts the complainants could not be contacted, and as a result, the exposure and/or cause could not be verified.

Due to the shortened bathing season and modified beach monitoring plan, DOHMH collected fewer total samples than during a normal beach season. A normal beach season would have run from May 25, 2020 to September 13, 2020, with some pre-season sampling occurring too. The shortened season ran from July 1, 2020 to September 7, 2020, with some variable and extended pre-season sampling occurring due to the uncertainty around COVID-19 timelines. Additionally, DOHMH reduced the frequency of sampling events at certain beaches from weekly to biweekly. Further, DOHMH reduced the number of sampling locations per beach sampling event, resulting in fewer samples collected per monitoring period. These changes were made due to COVID-19 staffing precautions and safety measures. In 2020 DOHMH collected roughly 300 samples, compared to over 1,000 samples in a normal beach season. Given the limitations of this beach season, DOHMH interpreted sample results conservatively, and in most cases did not initiate resampling events to use resample information to reduce notification periods.

13.1.4 Inspections

During the 2020 beach season, inspections of all 21 open, public and private beaches were successfully conducted by the Department. One facility was cited for violations at the time of inspection (during a Coney Island inspection, minor disrepair of parts of the boardwalk was observed) as indicated in Appendix C of the Beach Report 2020.

14 CHARACTERIZATION AND MONITORING

"The permittee shall characterize the combined sewer system, determine the frequency of overflows, and identify CSO impacts in accordance with Combined Sewer Overflows, Guidance for Nine Minimum Controls, EPA, 1995, Chapter 10. These are minimum requirements, more extensive characterization and monitoring efforts which may be required as part of the Long Term Control Plan."

Because DEP maintains many regulator structures that have very complex geometry and are tidally influenced, it is not feasible to monitor all CSO outfalls. DEP does have a SCADA system that helps provide some information pertaining to water levels in the regulator structures and provides some indication of whether or not a CSO is occurring, but SCADA does not provide a direct flow measurement and is influenced by factors such as tidal elevations. DEP has also conducted some very comprehensive and intense interim flow monitoring using specialized vendors at a number of representative locations to calibrate and validate the InfoWork sewer system models. These calibrated InfoWork models are used to estimate the annual CSO volume and frequency for all the CSO outfalls.

There are four (4) NOAA rain gauges at the area airports, and DEP maintains rain gauges at all fourteen (14) WRRFs.

For additional details, refer to the CY 2020 Projected CSO Discharges table in Appendix 11.

DEP also regularly posts additional monitoring data on its website, including waterbody advisories. Information on the City's waterbody advisory application can be found here:

https://www1.nyc.gov/html/dep/html/harborwater/nyc_waterbody_advisory.shtml

15 ADDITIONAL CSO BMP SPECIAL CONDITIONS

5. b. "Key Regulator(s) Monitoring Reporting: Following installation of the CSO monitoring equipment described in Subparagraph 3(a) above, within 45 days after the end of each month, DEP shall provide to DEC, a monthly report of all known or suspected CSO discharges from key regulators outside the period of a critical wet weather event. Such monthly report shall provide an itemized list of such CSO discharges, the approximate start time and end time for each discharge, the corresponding WWTP flow rate and the start time and end time of the critical wet weather event. Within 90 days after the end of each quarter (after the first year, reports shall be filed for each calendar year and shall be submitted with the Annual CSO BMP Report), DEP shall submit for DEC approval an engineering analysis of the cause(s) for each discharge and an analysis of options to reduce or eliminate similar future events. A schedule must be provided for all reasonable and cost effective options which can be completed within two years (exclusive of the time required for procurement) and DEP must complete those projects in accordance with a DEC approved schedule. All other options shall be considered as part of the Long Term Control Plan ("LTCP") process towards achieving the water quality goals of the Clean Water Act, and built into the LTCP hydraulic model per Paragraph 6 below.

First year quarterly reports have been submitted and annual reports to be submitted hereafter with the Annual CSO BMP Reports."

DEP includes this section pursuant to Item 5.c. in Appendix B of Additional CSO BMP Special Conditions in the SPDES Permits. Item 5.b requires DEP to submit reports of all known or suspected CSO discharges from key regulators outside the period of a critical wet weather event. For the first year after the effective date of the 2014 CSO BMP Order, Item 5.b also required DEP to quarterly "submit for DEC approval an engineering analysis of the cause(s) for each discharge and an analysis of options to reduce or eliminate similar future events." DEP is to provide subsequent updates of the engineering analyses in the CSO BMP Annual Reports, and this section fulfills that requirement.

DEP's SPDES permits define a critical wet weather event as "*a* wet weather event which causes or would cause the influent flow at the WWTP to exceed the wet weather flow identified in the associated SPDES permit." Generally, the wet weather flow identified in the associated SPDES permit of the WRRF is two times the design dry weather flow (2xDDWF), but it may be less than 2xDDWF under certain operational limitations (e.g., when DEP has reported critical equipment to be out of service and has submitted a reduced capacity notice to DEC). CSO discharges from key regulators that occurred outside of a critical wet weather event were determined based on inference from

synoptic data collected from the city telemetry system, meteorological and tidal observations, and plant operational data. Analysis of mitigation strategies to reduce the occurrence of discharges outside the critical wet weather periods is being performed using InfoWorks CS models of the city's collection systems.

This submission evaluates observations from January 2020 through December 2020 of all known or suspected CSO discharges from key regulators outside the period of a critical wet weather event. A discussion of the methodology, calculations and analysis, and potential limitations to mitigation strategies can be found in the quarterly report submittals provided for the first year of analysis.

15.1 ENGINEERING ANALYSIS

The SPDES permit requires DEP to evaluate and report on Key Regulators, and stipulates that DEP shall "submit for DEC approval an engineering analysis of the cause(s) for each discharge and an analysis of options to reduce or eliminate similar future events." It should be noted that DEP implemented an extensive Regulator Improvement Program in the 1990s, through which low-cost upgrades were made to dozens of regulators.

As discussed in previous report submittals, several strategies were identified that may alter the timing of regulator discharges so that such discharges occur less frequently. We considered the following strategies to have the greatest potential for success:

- Capital Improvements Already in Development. Capital projects in various stages of planning and development are expected to alter the timing of CSO discharges. These include not only projects directly at the regulator, but also other projects that may influence regulator performance, such as new force mains, the operation of a regional CSO facility, or downstream conveyance enhancements.
- Removal of Existing Elbow in Drop Pipe. In certain locations, vertical pipes convey flow from the regulator to the interceptor. As a result of the historical practice of installing elbows as a means of energy dissipation, vertical pipes are known to have chronic clogging that could contribute to early tipping.
- Enhanced Operations & Maintenance. Regulators can be influenced by the performance of the downstream interceptor, which may be influenced by, among other things, sedimentation or wet well operation at the WRRF.
- Flow Transference. The City sewers are divided into several mostly independent service areas. This division suggests there may be potential for diverting flow from an area of limited wet weather capacity to a nearby area with excess wet weather capacity.
- Continued Monitoring. Monitoring over a longer period of time is prescribed where regulator performance is not yet clearly understood, or where a regulator yields a

small number of events compared to other Key Regulators. Limited sample sizes increase the risk of misinterpretation of data, and resultant ineffective mitigation strategy or inappropriate action taken at a regulator that is not actually significantly discharging early. A larger data set will allow for more accurate interpretation and better decision-making on future capital commitments.

- Citywide / Open Waters LTCP. As part of the Open Waters / Citywide LTCP all category A and B regulators discharging into the open waters were evaluated to assess alternatives to reduce hours of CSO discharges outside of the critical period. These alternatives included raising and lengthening of weir structures, opening of orifices, enlargement of branch interceptors, and in some locations expanding pump station capacities.

15.2 RESULTS

Potential mitigation strategies were not analyzed for those Key Regulators that are expected to be hydraulically influenced by capital projects already developed to reduce CSO discharges and increase flow to the WRRF, as required by enforceable milestones under the CSO Order. Examples of potential, cost-effective mitigation strategies that were evaluated include weir modifications, flow transference, enhanced operation and maintenance, and resizing branch interceptors. After consideration of the cause(s) of their discharging outside of a critical wet weather event, any possible system limitations and a number of approaches that might be expected to reduce the occurrence of such discharges, no reasonable options that could be completed within two years were evaluated. The results of the open waters regulator evaluations were included in the Citywide / Open Waters LTCP that was submitted on October 1, 2020. See Appendix 12.2 for a summary of the status of all telemetered regulators. The Citywide CSO LTCP proposed the following projects to further reduce CSO discharges and convey additional wet weather flow to the WRRFs:

- Gravity flow diversion structure at Hannah Street Pump Station (PR WRRF)
- Automated gate for Regulator OH-9C, CSO Outfall OH-015 (OH WRRF)
- Bending weir and regulator modifications at CSO Outfalls TI-003 and TI-023 (TI WRRF)
- Optimization of regulators at CSO Outfalls RH-005 and RH-014 (RH WRRF)
- Optimization of regulators at CSO Outfalls NR-038, NR-040, and NR-046 (NR WRRF)

Table 15.1 summarizes the observations of Key Regulators during the period of analysis, which includes data from January 2020 through December 2020. Of the locations where no capital improvements are currently planned, six (6) regulators had no occurrences and seven (7) locations had an average of one or fewer occurrences per month.

Table 15.1 Key Regulators with Potential CSO Discharges outside the Period of a Critical Wet Weather Event, January through December 2020

Key Regulator	2020 Number of Occurrences													Total Duration (hours)	Analysis Category
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	To Date		
26W-01	0	0	0	0	0	0	0	0	0	0	3	0	3	1.25	A
26W-02	0	1	2	0	1	1	2	0	2	0	5	1	15	26.25	A
BBH-02	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
BBH-06	1	5	1	2	1	0	2	4	1	1	2	1	21	4.25	C
BBL-04	0	2	2	4	0	4	4	5	5	1	5	2	34	18.25	C
BBL-22	0	0	1	1	0	1	0	3	1	0	0	0	7	2.25	B
HP-05	1	1	0	2	2	1	3	4	2	3	4	0	23	42.25	A
HP-10	1	0	0	2	1	1	2	0	1	0	1	0	9	7.25	B
HP-13	1	3	4	4	1	1	4	5	3	2	4	2	34	66.50	C
JA-03	1	0	1	0	1	0	4	3	4	1	2	0	17	10.50	A
NCB-01	0	1	0	2	1	3	2	2	2	2	5	1	21	9.75	C
NCB-04	0	2	2	1	1	5	2	3	2	2	2	1	23	33.25	C
NCM-47	0	0	0	0	1	1	1	4	2	2	4	1	16	27.75	C
NR-16	0	0	0	1	0	2	2	4	2	1	1	0	15	7.00	C
NR-23	0	0	0	1	0	1	4	4	1	0	0	0	11	5.25	B
NR-33	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
OH-01	1	1	1	0	0	0	0	0	2	0	0	0	5	6.25	B
OH-06	0	0	0	0	1	0	1	0	1	0	0	0	3	4.00	B
PR-06W	1	0	2	4	2	1	7	2	2	3	2	2	28	50.75	C
PR-13E	1	3	3	6	2	3	6	5	4	4	5	2	44	104.50	C
RH-02	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
RH-20	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
TI-09	1	3	3	3	1	0	2	4	2	2	6	3	30	48.50	C
TI-10A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
WIB-53	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
WIB-67	0	0	0	2	2	0	3	1	1	1	1	0	11	32.50	B
WIM-23	0	0	0	0	0	1	2	0	0	0	0	1	4	2.75	B
Count**	9	10	11	14	14	14	18	15	19	13	16	11	21		

*Count of regulators with at least one event

Analysis Categories

Category A: Key Regulators that may be influenced by planned capital improvements (Projects are currently in design or construction that may result in CSO reductions and additional wet weather capture);

Category B: Key Regulators averaging one or fewer potential discharge outside the period of a critical wet weather event per month

Category C: All other Key Regulators with an average of more than one potential discharge outside the period of a critical wet weather event per month.

15.2.1 Key Regulators that may be influenced by planned capital improvements (projects are currently in design or construction that may result in CSO reductions and additional wet weather capture)

26W-01

Regulator 26W-01 had three (3) potential discharge outside the period of a critical wet weather event; the total duration of this period was 1.25 hours. Note, 26th Ward WRRF operated at a reduced interim wet weather capacity for the duration of 2020. In addition, there are several planned capital improvements scheduled at the 26th Ward WRRF proceeding pursuant to the CSO Order that may influence the performance of regulator 26W-01:

Installation of a new primary settling tank under Contract 26W-20, currently in construction and scheduled to be completed in 2022; milestone date has been modified as a result of a Force Majeure claim that has been submitted and approved. Once the new facilities are in service, DEP will commence a 12-month monitoring period, and provide an engineering analysis in the applicable CSO BMP Annual Report following that 12-month monitoring period.

26W-02

Regulator 26W-02 had fifteen (15) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 26.25 hours. Note, 26th Ward WRRF operated at a reduced interim wet weather capacity for all of 2020 due to ongoing construction. Pursuant to the CSO Order, there is a high-level storm sewer project underway in this drainage area, which was scheduled to be completed by December 2022 but has been delayed due to an ongoing Force Majeure. This work, in conjunction with construction of a fifth primary settling tank, may impact wet weather performance. Once the new facilities are in service, DEP will commence a 12-month monitoring period, and provide an engineering analysis in the applicable CSO BMP Annual Report following that 12-month monitoring period.

HP-05

Regulator HP-05 had twenty-three (23) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 42.25 hours. Regulator HP-05 had a planned capital improvement, the installation of the Pugsley Parallel Interceptor upstream of this regulator under Contract CS-ER-WCP, which was completed in February 2020. There is also additional work planned at regulator HP-09 and at regulator HP-05 under the approved Bronx River LTCP that will impact performance; the current construction completion milestone is September 2026. Once the new facilities are in

service, DEP will commence a 12-month monitoring period, and provide an engineering analysis in the applicable CSO BMP Annual Report following that 12-month monitoring period.

JA-03

Regulator JA-03 had seventeen (17) potential discharges outside the period of a critical wet weather event. The total duration of these periods was 10.50 hours. There are capital improvement projects that were recently completed that may influence the performance of regulator JA-03. Bending weirs were installed at Regulators JA-03 & JA-14 along with a parallel interceptor to convey additional flow to the plant. As of June 2020, a new lateral Bergen Basin sewer was constructed enabling the sluice gate at Regulator JA-14 to be fully opened to maximize wet weather flow to the Jamaica WRRF. Now that the new facilities are in service, DEP will commence a 12 month monitoring period, and will provide an engineering analysis in the next CSO BMP Annual Report.

15.2.2 Key Regulators Averaging One Discharge or Fewer per Month

BBH-02

Regulator BBH-02 did not have any potential discharges outside the period of a critical wet weather event. However, DEP will continue to monitor it and report in accordance with DEP's SPDES permits. . Regulator BBH-02 had previously been in Category A prior to 2019, as a regulator potentially influenced by planned capital improvements that included work at regulator BBH-02 to raise the weir.

BBL-22

Regulator BBL-22 had seven (7) potential discharges outside the period of a critical wet weather event; the total duration of these periods was only 2.25 hours. Regulator BBL-22 had previously been in Category A prior to 2019, as a regulator potentially influenced by planned capital improvements. Regulator BBL-22 was further evaluated as part of the Citywide / Open Waters LTCP but no viable alternative was identified.

HP-10

Regulator HP-10 had nine (9) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 7.25 hours. The evaluation for Regulator HP-10 was previously submitted to DEC in the Quarterly Key Regulator Monitoring Reports; it was identified as requiring further consideration as part of the LTCP

process. Regulator HP-13 was further evaluated as part of the Citywide / Open Waters LTCP but no viable alternative was identified.

NR-23

Regulator NR-23 had eleven (11) potential discharges outside the period of a critical wet weather event; the total duration of these events was 5.25 hours. Regulator NR-23 was further evaluated as part of the Citywide/Open Waters LTCP but no viable alternative was identified.

NR-33

Regulator NR-33 did not have any potential discharges outside the period of a critical wet weather event. However, DEP will continue to monitor it and report in accordance with DEP's SPDES permits.

OH-01

Regulator OH-01 had five (5) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 6.25 hours. The evaluation for Regulator OH-01 was previously submitted to DEC in the Quarterly Key Regulator Monitoring Reports and it was further evaluated as part of the Citywide/Open Waters LTCP but no viable alternative was identified.

OH-06

Regulator OH-06 had three (3) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 4.00 hours. The evaluation for Regulator OH-06 was previously submitted to DEC in the Quarterly Key Regulator Monitoring Reports. Regulator OH-06 was further evaluated as part of the Citywide/Open Waters LTCP.

RH-02

Regulator RH-02 did not have any potential discharges outside the period of a critical wet weather event. However, DEP will continue to monitor it and report in accordance with DEP's SPDES permits.

RH-20

Regulator RH-20 did not have any potential discharges outside the period of a critical wet weather event. However, DEP will continue to monitor it and report in accordance with DEP's SPDES permits.

TI-10A

Regulator TI-10A did not have any potential discharges outside the period of a critical wet weather event. However, DEP will continue to monitor it and report in accordance with DEP's SPDES permits.

WIB-53

Regulator WIB-53 did not have any potential discharges outside the period of a critical wet weather event. WIB-53 had previously been in Category A prior to 2020, as a regulator potentially influenced by planned capital improvements. WIB-53 is about 1,000 feet from the Bronx Grit Chamber, where all four bar screens have been replaced. In addition, the main sewage pumps at the Wards Island WRRF were replaced with construction completion certified in August 2019. The bar screen replacement work was completed in January 2017.

WIB-67

Regulator WIB-67 had eleven (11) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 32.50 hours. WIB-67 had previously been in Category A prior to 2020, as a regulator potentially influenced by planned capital improvements. WIB-67 was influenced by the Bronx Grit Chamber and by the main sewage pump work at the Wards Island WRRF. Regulator WIB-67 was further evaluated as part of the Citywide/Open Waters LTCP and there is a proposal to daylight Tibbett's Brook that will take a significant portion of wet weather flow that is currently being discharged into the combined sewers and divert it directly to the Harlem River. This effort will result in considerably less wet weather flow going to regulator WIB-67.

WIM-23

Regulator WIM-23 had four (4) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 2.75 hours. WIM-23 had previously been in Category A prior to 2020, as a regulator potentially influenced by planned capital improvements. Regulator WIM-23 was influenced by the Manhattan Grit Chamber and by the main sewage pump work at the Wards Island WRRF. Regulator WIM-23 was further evaluated as part of the Citywide/Open Waters LTCP but no viable alternative was identified.

15.2.3 Key Regulators Averaging More than One Discharge per Month

BBH-06

Regulator BBH-06 had twenty-one (21) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 4.25 hours. Regulator BBH-06 had previously been in Category A prior to 2019, as a regulator potentially influenced by planned capital improvements. The Flushing Bay LTCP recommended construction of a CSO Storage Tunnel that would capture overflow from this regulator.

BBL-04

Regulator BBL-04 had thirty-four (34) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 18.25 hours. Regulator BBL-04 had previously been in Category A prior to 2019, regulators potentially influenced by planned capital improvements. The Newtown Creek LTCP recommended diversion of wet weather flow to the Borden Avenue Pump station and increasing capacity of this pump station.

HP-13

Regulator HP-13 had thirty-four (34) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 66.50 hours. A review of the inclinometer data has been used to confirm the accuracy of the reported number of discharges. The Bronx River LTCP recommended regulator modifications and a parallel sewer at this regulator that is currently anticipated to be completed in 2026.

NCB-01

Regulator NCB-01 had twenty-one (21) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 9.75 hours. Since its 12-month monitoring period was completed in CY 2018, it has had an average of more than one critical event per month. The Newtown Creek LTCP recommended a CSO Storage Tunnel that would capture overflow from this regulator.

NCB-04

Regulator NCB-04 had twenty-three (23) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 33.25 hours. A review of the inclinometer data has been used to confirm the accuracy of the reported number

of discharges. Regulator NCB-04 was further evaluated as part of the Citywide/Open Waters LTCP but no viable alternative was identified.

NCM-47

Regulator NCM-47 had sixteen (16) potential discharges outside the period of a critical wet weather event; the total duration of these was 27.75 hours. Regulator NCM-47 was further evaluated as part of the Citywide/Open Waters LTCP.

NR-16

Regulator NR-16 had fifteen (15) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 7.00 hours. Regulator NR-16 was further evaluated as part of the Citywide/Open Waters LTCP but no viable alternative was identified.

PR-06W

Regulator PR-06W had twenty-eight (28) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 50.75 hours. The evaluation for Regulator PR-06W was previously submitted to DEC in the Quarterly Key Regulator Monitoring Reports; it was further evaluated as part of the Citywide/Open Waters LTCP but no viable alternative was identified.

PR-13E

Regulator PR-13E had forty-four (44) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 104.50 hours. The evaluation for Regulator PR-13E was previously submitted to DEC in the Quarterly Key Regulator Monitoring Reports; it was further evaluated as part of the Citywide/Open Waters LTCP but no viable alternative was identified.

TI-09

Regulator TI-09 had thirty (30) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 40.50 hours. The Flushing Creek LTCP recommended floatables control and disinfection at this regulator.

16 SUSTAINABILITY AND POLLUTION PREVENTION ACTIVITIES

16.1 WATER CONSERVATION

DEP values the role of water conservation and demand management in the responsible long-term management of New York City's water supply. As a result, actual water demand is down more than 30% since the 1990s, despite increasing population. However, DEP must consider the increasing uncertainty of climate change — predictions of warmer temperatures and greater precipitation variability — in its management of the City's water supply and the demand for this resource. Further, the leaking of the Delaware Aqueduct and its planned shutdown and repair in 2022 as part of DEP's Water for the Future Program is a near-term certain event that provides an imperative not only to proactively manage, but also to explicitly reduce, existing water demand to ensure adequate water supply through this period.

16.1.1 Program Description

DEP's water conservation efforts aim to reduce water use in New York City and upstate communities by 20 million gallons per day (MGD) by 2022. This goal is detailed in the 2018 Water Demand Management Plan, accessible here

https://www1.nyc.gov/assets/dep/downloads/pdf/water/drinking-water/2018-water-demand-management-plan.pdf.The plan sets forth six major strategies DEP continues to implement to reduce water use. Below are the plan's six strategies:

- Municipal Water Efficiency Program: Involves retrofits of city-owned properties.
- Residential Water Efficiency Program: Focuses primarily on the Toilet Replacement Program for multi-family buildings.
- Non-Residential Water Efficiency Program: Collaboration with private sector organizations including restaurants, hotels, hospitals, and universities.
- Water Distribution System Optimization: Entails system repairs and upgrades, managing water pressure, and refining water meter accuracy and leak detection.
- Water Supply Shortage Management: Encompasses the review and revision of plans to prepare for a drought and other water shortages.
- Wholesale Customers Water Demand Management Program: Targets demand management planning and implementation for wholesale customers north of the City.

The following is a summary of DEP's 2020 progress in implementing the above-listed strategies.

16.1.2 Municipal Water Efficiency Program

DEP has established partnerships and completed several projects with key municipal agencies and entities to support water efficiency measures in their facilities. Partners include DOE, DPR, the New York City Fire Department (FDNY), the City University of New York (CUNY), New York City Health and Hospitals Corporation (HHC), New York City Department of Citywide Administrative Services (DCAS), and New York City Department of Cultural Affairs - Cultural Institutions Group (CIG).

Through its ongoing partnership with DOE, DEP funded the replacement of over 34,600 toilets and urinals with high-efficiency models in 402 school facilities across all five boroughs through 2018. In 2020, DEP continued its partnership with DOE and worked to execute a Memorandum of Understanding to retrofit up to an additional 200 school facilities beginning in 2021.

In 2020, DEP continued partnering with DPR on two projects. In Central Park, DEP is partnering with Central Park Conservancy (CPC) and DPR to connect the Park's northern waterbodies, including the Harlem Meer, to recirculate stormwater. The project will allow for use of recirculated water rather than potable water, and is anticipated to result in a savings of 0.83 MGD. In fall 2020, a major milestone was achieved when project design commenced. In addition to the potable water reduction, other benefits include a CSO reduction of up to 4 million gallons per year in the East River, and improved water quality in the Park's northern waterbodies.

In Prospect Park, DEP is partnering with Prospect Park Alliance (PPA) and DPR to replace a valve on the make-up water line for the Park's lake system. This project is anticipated to result in a savings of 0.80 MGD. In December 2020, DEP and DPR executed an MOU for this project and completed the funding transfer from DEP to DPR. As an integrated, One Water project, this valve replacement is expected to reduce CSOs during rain events to Gravesend Bay and the Upper Bay by up to 12 million gallons per year.

In December 2019, DEP launched a one-year fifth Water Challenge to all 14 Wastewater Resource Recovery Facilities (WRRFs) to encourage water reduction in DEP's own facilities. All plants were encouraged to reduce demand by 10% over a two-year baseline average (calendar years 2018 and 2019). DEP's fifth Water Challenge concluded in December 2020 and resulted in a total savings of 0.9 MGD. Of the 14 WRRFs, eight were able to reduce water consumption by at least 10%. Red Hook achieved a total savings of 89,073 GPD (the most savings for WRRFs with dewatering facilities), which is a 45 percent reduction from its baseline consumption. Coney Island achieved a total savings

of 132,079 GPD (the most savings for WRRFs without dewatering facilities), which is a 41 percent reduction from its baseline. Additionally, DEP is currently working to replace inefficient equipment at our treatment facilities with high-efficiency models, e.g., water pumps and water hoses used to clean equipment at each WRRF.

In March 2020, DEP and HHC executed a Memorandum of Understanding to implement water efficiency fixture upgrades at Jacobi Hospital, Woodhull Hospital, Elmhurst Hospital, Bellevue Hospital, and North Central Bronx Hospital. HHC's contractor began surveying these facilities in early 2020 to identify the precise count and type of fixtures that are eligible for replacement or upgrade. The surveys were paused in spring 2020 and the project overall remains on hold due to the COVID-19 pandemic. DEP and HHC will resume their partnership after the pandemic subsides and when HHC's resources allow.

DCAS's portfolio includes approximately 50 public buildings throughout the city, including courts and City office buildings. Partnering with DEP, DCAS surveyed 10 buildings in DCAS's direct portfolio of public buildings throughout the city. In June 2020, DCAS completed this partnership project by implementing 268 restroom fixture replacements in four of these buildings: DCAS offices (2 Lafayette Street), City Planning Building (22 Reade Street), Queens Criminal Court (125-01 Queens Boulevard), and Manhattan Civil Courthouse (111 Centre Street). These replacements achieve an estimated water savings of 17,200 gallons per day, or approximately 6.3 million gallons per year.

The City University of New York (CUNY) is part of New York State's public university system and is comprised of 25 colleges across the five boroughs, making it the largest urban public university in the United States. In 2020, DEP and CUNY extended their partnership and anticipate executing an Interagency Agreement in 2021 to replace inefficient fixtures at Queens College. In total, DEP and CUNY anticipate replacing over 600 fixtures across four campus buildings at Queens College, for an anticipated savings of 0.03 MGD. DEP and CUNY anticipate beginning these upgrades in 2021.

16.1.3 Residential Water Efficiency Program

In 2019, DEP concluded the Toilet Replacement Program, after five years of successful implementation. The program provided eligible residential building owners with $125 vouchers to replace old, inefficient toilets with high-efficiency, WaterSense-certified models. DEP managed contracts with four toilet wholesale vendors to accept the vouchers and provide the toilets to consumers through the program's online application tool. Through the program, approximately 13,300 toilets were retrofitted citywide, for a savings of 0.63 MGD.

In addition to the Toilet Replacement Program, DEP directed its contractor, Honeywell, to provide building owners with complimentary household water conservation surveys.

The surveys assist building owners with identifying opportunities for water savings and detecting leaks.

16.1.4 Non-Residential Water Efficiency Program

DEP successfully launched three Water Challenges to different commercial sectors: hotels, restaurants, and hospitals. Modeled after the Mayor's Carbon Challenge, the program encourages participants to reduce their annual water consumption by an average of 5% from their baseline year (measured as the 12-month period prior to the beginning of the Challenge). DEP prepares monthly reports to help participants track their consumption and their performance against the other participants. DEP also hosts quarterly workshops to help participants learn how to make their facilities more water efficient.

DEP completed its two-year Water Challenge to Universities in August 2020. Collectively, the six participants (Fordham University, Lincoln Center Campus; The New School; Long Island University, Brooklyn Campus; Pace University; St. John's University; and Weill Cornell Medicine) reduced their monthly average water consumption by 11 percent, or 3.4 million gallons – a total annual average savings of 41,400,000 gallons. Because of the COVID-19 pandemic and the campus closures that followed, reductions in water consumption were only considered and calculated toward the Challenge goal for the period of August 2018 to February 2020.

Like other Challenges, the Water Challenge to Universities was a voluntary Challenge effort by participants to reduce their water consumption by at least 5 percent. The participating universities ranged in size, type, and resource availability. Through routine monitoring, knowledge sharing during quarterly workshops, and reflection through the annual reporting process, participants identified projects to implement on their campuses that resulted in considerable water savings. Examples of implemented projects included replacement of inefficient, older HVAC equipment; using water-intensive equipment only when most needed; and retrofitting older toilets. In addition to focusing on facility-level water savings, several of the participants developed water conservation campaigns to engage their students, faculty, and staff.

DEP's Water Conservation and Reuse Grant Pilot Program provides commercial, industrial, and multi-family residential property owners with incentives to install fixture retrofits and other water efficiency technologies, such as on-site water reuse systems, totaling $50,000 or more on a single private property. In 2020, DEP received over 20 applications. After ranking these applications by their estimated water savings, cost effectiveness, feasibility, and additional metrics, DEP offered grant funding to the top five ranked projects. Of these projects, one applicant has accepted and is currently in the process of confirming its funding and legal agreements. The project includes a 400,000

gallon per day water reuse system that contributes not only water conservation benefits, but also CSO reductions.

After a successful first round, DEP launched a second round from July to October 2020 and subsequently shifted to a rolling basis application process. Primed for new applications, DEP continues to coordinate administration of logistics for the selected grantee in moving its water conservation project forward. While the goal of the program is primarily to conserve potable water, the projects also offer the potential co-benefit of reducing flows to the sewer system and wastewater facilities. In reducing flow to sewers, on-site water reuse could also contribute to reducing CSOs. As an additional co-benefit, there is a potential reduction in greenhouse gas emissions from reduced flows to DEP's WRRFs.

16.1.5 Water Distribution System Optimization

Water distribution system optimization includes system repairs and upgrades, water pressure management, refining water meter accuracy, and leak detection.

DEP has a large service area with approximately 7,000 miles of pipes that distribute water to end users. As water travels through these underground pipes, undetected leaks can occur; therefore, constant maintenance, leak detection, and metering optimization are key to efficient management of New York City's water supply. DEP's goal is to increase leak survey efforts by modernizing the leak detection program to detect, locate, and stop water leakage by leveraging best-in-class technology to pinpoint hard to find and unreported leaks. Additionally, DEP's goal is to increase the number of miles surveyed by increasing staffing to reinstitute multiple, proactive surveys of high-risk mains. In 2020, DEP surveyed 455 miles of water mains.

New York City has more than 109,500 hydrants located throughout the five boroughs. These critical fire suppression assets can discharge up to 1,000 gallons per minute. When New Yorkers open hydrants in the summer to cool off and fail to use an approved spray cap, local water pressure can be negatively impacted. Therefore, DEP sponsors the Hydrant Education Action Team (HEAT) to educate New Yorkers about the risks of illegally opening hydrants.

DEP ensures proper maintenance by performing assessments, testing pressure, and repairing hydrants when necessary. In 2020, DEP repaired 7,841 hydrants, replaced 1,018, and provided other maintenance services to 20,431 additional hydrants.

DEP's efforts to achieve universal metering of all DEP water and sewer accounts is motivated by the need to reduce non-revenue water use and to promote conservation among water users by providing accurate consumption information. The universal metering initiative is also critical to DEP's measuring the success of many other demand management strategies. Accurate consumption data enable DEP to determine whether

target consumer groups have achieved projected consumption reductions or how demand management strategies may be adapted to improve their effectiveness. Because of the COVID-19 pandemic, DEP paused meter replacement operations for seven months. In the remaining active five months in 2020, DEP replaced 708 large meters (i.e., those over 1.5 inches in diameter).

16.1.6 Water Supply Shortage Management

In December 2016, the Mayor's Office of Operations and the City Law Department certified DEP's revisions to the "Emergency Drought Rules." The proposed, revised title is "Water Shortage Rules," replacing the narrower focus of the previous title. The proposed revisions address water shortage emergencies due to circumstances other than natural conditions, such as planned and unplanned infrastructure outages and repairs that the City may face over the next several years. The proposed revisions also add, remove, and change certain water-use prohibitions during the different stages of water shortage emergencies to better reflect DEP's understanding of City water use. DEP anticipates formal adoption of the revised rules prior to the 2022 shutdown.

16.1.7 Upstate Wholesale Customers Demand Management Program

In 2014, DEP launched the Wholesale Customer Demand Management Program to extend demand reduction strategies to its wholesale customers (Utility Partners). The goal of this program is to have Utility Partners implement demand management projects to reduce demand, by October 2022, by 5 percent from their 2013 baseline demand. To achieve this, DEP partnered with some of its largest utility partners to develop custom Water Demand Management Plans (WDMP) tailored to each Utility Partner's water system. These Utility Partners include the Town of Greenburgh, the Village of Ossining, the Village of Scarsdale, the Village of Tarrytown, Westchester Joint Water Works (WJWW), the City of White Plains, and the City of Yonkers.

Because of the COVID-19 pandemic, anticipated funding for this program was reallocated to help offset fiscal impacts brought on by the pandemic. As such, DEP and its Utility Partners have agreed to pause current plans to implement projects under this program until funding becomes available. Utility Partners were encouraged to continue utilizing tools that were introduced and discussed during prior collaborations, including continuing to improve their efforts to address non-revenue water. DEP's outreach and engagement, coupled with the determination and initiative of the Utility Partners, has resulted in considerable demand savings, despite the pandemic-related impacts. In total, the two-year sustained water demand savings achieved by these 7 Utility Partners is 5.21 MGD, a 9 percent decrease from their 2013 baseline.

16.1.8 Drinking Water Supply and Quality Statement

In 2020, DEP continued efforts to notify the public of the availability of the 2019 Drinking Water Supply and Quality Statement. The agency sent bill inserts to 710,000 bill-paying customers notifying them of the report's availability on the DEP website; another 98,000 customers were notified electronically, and 32,000 customers were sent postcards. Additionally, outreach to all customers included:

- Prominently displaying information about the Report on the DEP homepage beginning February 24, 2020.
- Highlighting and mentioning the Report in the March 10, 2020 and June 9, 2020 issues of *Pipeline,* the DEP newsletter which is distributed weekly to all 6,000 DEP employees and to over 1,500 members of the public.
- Posting about the publication of the Report on Twitter and Facebook on March 4, 2020. DEP has about 19,700 Twitter followers, and 12,800 "NYC Water" Facebook followers.
- Promoting the publication of the Report in a Facebook ad campaign that ran from June 1-30, 2020, and had over 177,000 impressions.
- Running an advertising campaign on various platforms across New York City, including:
    - On 100 bus shelter sites throughout New York City from June 1-28,.
    - On the NYC Ferry system from August 1-30, 2020.
    - At over 3,500 kiosks City-wide, through LinkNYC, resulting in over 1 million impressions from June 6-30, 2020.
    - As a public service announcement (PSA) on the NYC Life television channel from June 8, 2020 to September 8, 2020, on Taxi TV from June 6, 2020 to August 31, 2020, on radio station WNYE 91.5 FM June 6, 2020 to August 21, 2020, and on 311 from June 1-30, 2020.
- Contacting large housing complexes across New York City by phone and email to ask that they spread the word about the Report. The total populations reached in private large housing complexes is over 226,000 tenants; additionally NYCHA distribution reached 600,000 residents.

Regular outreach to New York City's libraries; at community and civic association meetings, outreach events (including trade shows, Greenmarkets, health fairs and street fairs), town halls, project tours, and tabling events; and at DEP speaking engagements throughout the five boroughs and the entire watershed were hampered by the COVID19 pandemic. Therefore, only 5,000 hard copies were distributed.

16.1.9 Rain Barrel Program

Because of the COVID-19 pandemic, DEP did not host any barrel giveaways in 2020. The rain barrel program will resume when city, state, and federal health and safety regulations allow.

16.2 GREASE OUTREACH

16.2.1 Development of an Expanded Grease Interceptor Program

DEP continues to develop the Expanded Grease Trap Program. The following summarizes activities during calendar year 2020:

- 67 initial inspections performed;
- 298 follow-ups/maintenance inspections performed;
- 242 Commissioner's Orders issued;
- 101 Notices of Violation issued;
- 273 new grease interceptor installations required.

The Bureau of Public Affairs & Communication's Environmental Compliance Outreach (ECO) Unit completed the following activities in 2020 relating to grease compliance and BMPs for the handling and disposal of grease and oils:

- Conducted 2 workshops for property owners and/or tenants

- Handled general inquiries from businesses (such as how to obtain a licensed, used cooking oil hauler by way of the NYC Business Integrity Commission).

Grease outreach has transitioned to the "Trash It, Don't Flush It" campaign, which has a more encompassing message on trash issues citywide and includes continued outreach to residents and businesses on proper grease disposal.

See below also for specific activities regarding DEP's ongoing SE Queens (Community Boards 12 & 13) and South Brooklyn (community Boards 13 & 15) projects:

DEP continued to distribute "Cease the Grease" posters and flyers (in various languages) and promotional products such as jar openers, sponges, grease recycling bags, and sink strainers, all of which contain proper grease management messaging. ECO also attended 2 trade shows and spoke to hundreds of businesses.

Because of the pandemic, consultative-type visits regarding commercial grease requirements (e.g., grease trap sizing, grease trap configuration, recycling of used cooking oil, etc.) were suspended. DEP continued to distribute information and grease logs to businesses through the established business hotline.

16.2.2 Environmental Compliance Outreach to Business Community

In 2020, DEP's ECO Unit continued, on a limited basis, to administer its core programs on compliance. ECO continued to work with its primary partners including local business groups and trade associations, and provided assistance by way of answering inquiries and attending trade shows. ECO also continued to do outreach to NYC property owners on DEP's grease requirements.

16.2.3 Southeast Queens Outreach

In 2020, ECO suspended door-to-door outreach but was able to distribute materials to 276 households. Door hangers were produced with "Trash It, Don't Flush It" information and were left at the residences.

16.2.4 South Brooklyn Outreach

In 2020, ECO continued outreach, to the extent allowed by the pandemic, to Brooklyn Community Boards 13 & 15, and held workshops for both those Community Boards. ECO focused on the Coney Island Creek area, performing outreach to 1448 households, including 634 NYCHA residences, with an estimated total population of 3663. Seventy-five businesses were also visited for grease outreach.

16.2.5 Staten Island Outreach

In 2020, ECO performed outreach and education in the Seaview area and was able to distribute "Trash It, Don't Flush It" materials to 374 households.

16.3 STORMWATER REGULATIONS AND ACTIVITIES

16.3.1 Stormwater Rule (see also Section 13 below)

DEP's stormwater performance standard ("Stormwater Rule"), enables the City to manage stormwater runoff more effectively and to maximize the capacity of the City's combined sewer systems to the maximum extent practicable. Promulgated in July 2012, the Stormwater Rule requires any new connections to the City's combined sewer system to comply with stricter stormwater release rates, effectively requiring greater on-site detention. The Stormwater Rule applies to new development and to alterations of existing development in the City's combined sewer area. For a new development, the stormwater release rate (RCNY Title 15, § 31-01(b)) cannot exceed 0.25 cubic feet per second (cfs) or 10% of the drainage plan allowable flow, whichever is greater (allowable flow is defined as the storm flow from developments that can be released into an existing storm or combined sewer based on existing sewer design criteria). If allowable flow is less than 0.25 cfs, the stormwater release rate cannot be greater than that flow. For alterations of

existing development, the stormwater release rate for the altered area is directly proportional to the ratio of the altered area to the total site area, and no new points of discharge are permitted (RCNY Title 15, § 31-03(a)(2)).

In conjunction with the implementation of the Stormwater Rule, DEP published a companion document, Guidelines for the Design and Construction of Stormwater Management Systems, to assist NYC's development community and licensed professionals in the selection, planning, design and construction of compliant on-site source controls.

DEP is currently developing a package of stormwater regulation revisions, referred to as the Unified Stormwater Rule, to update the 2012 Stormwater Rule requirements and provide alignment between the Stormwater Rule and the City's new Construction and Post-Construction Program (C/PC), which was launched in 2019. The City's C/PC Program complements the NYSDEC General Permit for Stormwater Discharges from Construction Activity (CGP) program in the NYC MS4 area by requiring DEP review and approval of stormwater pollution prevention plans (SWPPPs), and DEP inspection of construction sites both for stormwater impacts and for operation of post-construction stormwater management practices (SMPs). Legislation was approved in August 2020 to expand the C/PC Program citywide to CSO areas to further advance water quality objectives. The draft Unified Stormwater Rule package and a new citywide stormwater management manual are anticipated to be released in second quarter 2021.

DEP provides regular updates on the 2012 Stormwater Rule and forthcoming rule changes as part of its Green Infrastructure Annual Reports available on its website here https://www1.nyc.gov/site/dep/water/green-infrastructure.page.

16.3.2 Green Roof Tax Abatement

In 2019, the New York State legislature renewed the Green Roof Property Tax Abatement available to property owners installing green roofs. It reauthorized the reimbursement of $5.23 per square foot of installed green roof, and allowed the City to designate up to five community districts that would receive an enhanced abatement of $15 per square foot. The list of priority districts and the final rule were released in January 2021 and can be found on the NYC Mayor's Office of Sustainability website.

16.3.3 Local Laws 92 and 94 of 2019

As part of the New York City Climate Mobilization Act passed in 2019, New York City Council passed Local Laws 92 and 94, which require new and substantially renovated or enlarged rooftops to incorporate sustainable roofing on all available roof space. Owners can choose to install solar photovoltaics or green roofs to reduce energy costs and the urban heat island effect.

The City anticipates that these laws will help buildings manage up to 1 million additional gallons of stormwater per year, and help manage water quality and urban flooding.

16.3.4 Parking Lot Stormwater Pilot Program

First initiated in 2011, DEP's Parking Lot Stormwater Pilot Program generates revenue for operation and maintenance of the City's wastewater system. The program applies a stormwater discharge fee to stand-alone parking lots that contribute runoff to the City's wastewater system, but do not receive (or pay for) City water service. Effective July 1, 2020, DEP's stormwater discharge fee is currently $0.0678 per square foot. On July 1, 2020, DEP billed 488 accounts for $307,068.05. Parking lot owners who implement green infrastructure practices are exempt from the stormwater discharge fee. To date, no parking lot owners have implemented green infrastructure practices to become exempt from the stormwater discharge fee.

16.4 OneNYC Initiatives

The Mayor's Offices of Sustainability (MOS) and Resiliency (MOR) lead the City's sustainability planning efforts, leveraging and expanding upon many DEP programs. In 2020, the Mayor's Office issued the OneNYC 2020 Progress Report, detailing progress on 30 strategic initiatives for the City's future to address critical challenges such as climate change and increasing unaffordability. OneNYC pledges to protect and preserve the City from the risks of aging infrastructure and the impacts of climate change. Initiatives include committing to carbon neutrality by 2050, and strengthening communities, buildings, infrastructure, and the waterfront to be more resilient. DEP is implementing these initiatives in conjunction with its goals of reducing greenhouse gas emissions, eliminating solid waste sent to landfills, realizing the best air quality of all large cities in the U.S., mitigating neighborhood flooding, and creating useful, accessible, and beautiful open spaces. The OneNYC 2020 Progress Report included several DEP highlights, many of which are further described in this Report: expansion of green infrastructure implementation, drainage improvements in Southeast Queens, and implementation of water recirculation projects.

16.5 NYC Green Infrastructure Program

Released in September 2010, the NYC Green Infrastructure Plan sets forth a comprehensive strategy to use green infrastructure, together with water conservation, and cost-effective grey infrastructure, to improve the quality of the City's waterways. In

March 2012, DEC and DEP modified the CSO Order to incorporate green infrastructure into the regulatory framework. The resulting Green Infrastructure Program includes a citywide goal of managing the equivalent of one inch of stormwater runoff from 10% of impervious surfaces or a corresponding estimated volume of 1.67 billion gallons of capture within combined sewer areas by 2030 as approved by DEC in the 2017 Performance Metric Report. The Program primarily implements green infrastructure in three areas – within the City's streets and sidewalks through right-of-way (ROW) retrofits, within parks, schools and housing properties through public on-site retrofits, and on private property through stormwater incentives and regulations. To date, the Program is tracking over 10,000 green infrastructure assets constructed or currently in construction, managing over 1,200 greened acres.1

Despite the hurdles imposed by the COVID-19 pandemic, 2020 was still a tremendous year for the Program, with over 3,000 new ROW assets constructed through construction contracts bid across the Westchester Creek, Bronx River, Newtown Creek, Flushing Creek, and Jamaica Bay watersheds; continued construction on schoolyard retrofits; and design advancement on more than a hundred public properties. In 2021, the Program will advance construction on 36 DPR and NYCHA projects and will bid out green infrastructure construction at 30 DPR and 1 NYCHA sites. The Program will also launch its $53 million Private Property Retrofit Incentive Program in 2021.

More information on these initiatives and other updates on the Green Infrastructure Program can be found in the Green Infrastructure Annual Reports published on the DEP website every year on April 30 https://www1.nyc.gov/site/dep/water/green-infrastructure.page.

16.6 Climate Change Resiliency Planning

DEP continues to study climate change and to prepare for its impacts by modeling the potential effect of various climate scenarios on the City's water supply system through the Climate Change Integrated Modeling Project; protecting wastewater treatment plants from storm surge as part of the Wastewater Resiliency Program; and reducing urban flooding through cost-effective investments in grey and green infrastructure. Nine projects from DEP's Wastewater Resiliency Plan have been initiated as part of a portfolio of strategies to flood-proof critical equipment at treatment facilities. These projects will harden the infrastructure at the Bowery Bay, Hunts Point, Red Hook, Newtown Creek, Owl's Head, Port Richmond, Tallman Island, and Wards Island wastewater treatment plants. These investments enhance resiliency against future storms and include a buffer for sea level rise.

[1] A greened acre is the equivalent of one inch of stormwater runoff over one impervious acre

Based on the initial success of its “Cloudburst Resiliency Planning Study” in Southeast Queens, which leveraged a partnership with the City of Copenhagen, DEP has also been working with partners at the Department of Transportation (DOT), Department of Design and Construction (DDC), and New York City Housing Authority (NYCHA) to initiate design of two pilot projects. These “cloudburst” projects will help manage extreme rainfall events in St Albans and the South Jamaica Houses, both in Southeast Queens, by capturing rainfall of up to 2.3 inches per hour—a storm with a 10% chance of occurring in any given year by the middle of the century. In addition to providing a proof-of-concept for using green infrastructure to mitigate the effects of cloudbursts, the pilot projects will help reduce nuisance flooding in Southeast Queens and enhance the local landscape. As DEP continues to better understand future flood risk from extreme rain events, the Department will coordinate with its partner agencies to expand upon these initial cloudburst projects.

Most recently, DEP has begun to work with NYCHA on a feasibility study for a cloudburst project at the Clinton Houses in East Harlem. The feasibility study is partially funded by the Federal Emergency Management Agency (FEMA) and will include conceptual design and cost-benefit analysis to determine the eligibility of the project for FEMA hazard mitigation funding.

17 ANNUAL REPORT

"The permittee shall submit an annual report summarizing implementation of the above BMPs. The report shall list existing documentation of implementation of the BMPs and shall be submitted by May 1st of each year to the offices listed on the Recording, Reporting and Additional Monitoring page of this permit. Examples of recommended documentation of the BMP's are found in Combined Sewer Overflows, Guidance for Nine Minimum Controls, EPA, 1995. The permittee may obtain an electronic copy of the NMC guidance at http://www.epa.gov/npdes/pubs/owm0030.pdf. For guidance on developing the annual report, a BMP checklist is available from DEC on-line at http://www.dec.ny.gov/docs/water_pdf/csobmp.pdf. The permittee must submit a completed copy of this checklist along with the annual report. The actual documentation shall be stored at a central location and be made available to DEC upon request."

This report is the 18th annual report summarizing the implementation of the BMPs performed by DEP in calendar year 2020.

Field inspection logs, maintenance and repair schedules, summaries and analysis of performance are stored at DEP's Lefrak City office and respective crew quarters and are available to DEC upon request.

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Appendix 1:

- Exhibit 1 – CSO Maintenance Program
- Exhibit 2 – Rockaway Sanitary and Storm Sewer Projects
- Table 1 – CY'17 Chloride Concentrations Rolling Average Summary
- Table 2 – Yearly Average Tidal Inflow Comparison for CY'19-'20

Appendix 1.1: EXHIBIT 1 - CSO MAINTENANCE PROGRAM

August 14, 2003

Mr. Robert Elburn
Regional Water Engineer
New York State Department of
Environmental Conservation, Region 2
Division of Water
47-40 21st Street - 2nd Floor
Long Island City, New York 11101

Re: **NY0026131** **NY0026115**
NY0026191 **NY0026239**
NY0026204 **NY0026158**
NY0026182 **NY0026221**
NY0026166 **NY0026107**
NY0026212 **NY0026247**
NY0027073

Dear Mr. Elburn:

The attached CSO Maintenance and Inspection Program is submitted in compliance with the CSO Best Management Practice #1 contained in the SPDES permits for the following New York City WPCPs: Bowery Bay (Section XV(e)), Coney Island (Section XV(d)), Tallman Island (Section XV(e)), Jamaica (Section XIV(d)), Newtown Creek (Section XIV(e)), 26th Ward (Section XIV(e)), Hunts Point (Section XIV(e)), Rockaway (Section XIV(e), Owls Head (Section XIII(e)), Port Richmond (Section XIII(e)), Red Hook (Section XIII(e)), Wards Island (Section XIII(e)) and North River (Section XII(e)).

Sincerely yours,

Alfonso R. Lopez, P.E.
Deputy Commissioner

SR/fk

xc: Quinn/Sapienza/Rozelman/Volgende/Eckels/Hammerman/Kulcsar

CSO MAINTENANCE & INSPECTION PROGRAM
BEST MANAGEMENT PRACTICE #1 SPDES PERMIT

Section VIII (26W, HP, JA, NC, RK);
Section IX (BB, CI, TI);
Section VI (NR);
Section VII (OH, PR, RH, WI)

(a) *The permittee shall develop and implement a written maintenance and inspection program for all CSO's listed beginning on page 3 of this permit. This program shall include all regulators tributary to these CSOs. This is to insure that no discharge or leakage occurs during dry weather and that the maximum amount of wet weather flow is conveyed to the WPCP for treatment. This program shall consist of scheduled inspections with required repair, cleaning and maintenance performed as needed to prevent dry weather overflow and leakage and ensure maximum wet weather flow is conveyed in accordance with CSO BMP#4. Inspection reports shall contain a record of visual inspections, any observed flow, incidence of rain or snowmelt, condition of equipment and work required.*

Regulator / Tide Gate Maintenance Inspection Schedule

High priority regulators shall be inspected four times per month.
High Priority Regulators are regulators that convey at least five million gallons per day and / or inherently require high maintenance, or pose a threat to beaches because of their locations.

Normal priority regulators shall be inspected once per month.

Items of Inspection

The field crews inspect the entire regulator including, tide gates, sluice gates, access ways, electrical controls and any mechanical equipment and instrumentation located within each site. An inspection report must be completed for each CSO facility. This form is attached in appendix A.

During the inspection, the crews are responsible for correcting any conditions that they encounter which may have adverse effects on the proper operation of the regulator. Examples of these conditions include blockages or obstructions caused by debris that may result in partial or full dry weather bypassing.

Any blockage that the crew is not capable of removing is referred to an emergency Contractor, who is retained by the NYC DEP for such cases. The contractor is required to respond to the site within twenty-four hours of notification.
Furthermore, any structural damage noticed during the inspections upstream of the

regulators is referred to the appropriate group within DEP for repairs.

(b) *The permittee shall include in the maintenance and inspection program a plan to maintain CSO tide gates to prevent infiltration of seawater into the collection system such that the WPCP influent concentration of chlorides does not exceed a twelvemonth rolling average of 400 mg/l. The maintenance and inspection program shall specify corrective actions to be taken within twelve months of the influent chloride exceedance of 400 mg/l.*

CSO Tide Gate Maintenance Program

All tide gates are maintained and inspected on the same schedule as regulators. Antiquated tide gates are earmarked for replacement or reconstruction.

The maximum twelve-month rolling average of influent chloride concentration in the SPDES permits at all the applicable WPCPs except North River is 400-mg/L. The influent chloride concentration in the SPDES permit for North River WPCP is 250-mg/L.

In order to maintain CSO tide gates to prevent inflow of seawater into collection system the crews are responsible for correcting any conditions that they encounter during the inspections that may have adverse effects on the proper operation of the tide gates.

DEP is responsible for developing a drainage area evaluation program to identify possible sources of seawater infiltration. Chloride sampling and tide gate repairs are performed immediately by the CFO crews when seawater inflow is discovered and result in elevated levels of chlorides at the WPCPs. Corrective actions are taken within twelve months of influent chloride exceedance of 400 mg/l.

(c) *The permittee shall include in the maintenance and inspection program a schedule for telemetering regulators and a plan to report the telemetering results. Within six months after the completion of the telemetering of regulators required in the NYSDEC/NYCDEP Omnibus IV Consent Order Compliance Schedule (as noted in the outfall description page) the permittee shall record and report the number and duration of events that cause a discharge at an outfall during dry weather conditions.*

Regulator Telemetering

The installation of the telemetering equipment at one hundred and two regulators was completed in May, 2001 in accordance with the compliance schedule in Schedule B to the Omnibus IV Order on Consent.

The system is currently maintained through a service contract. The contractor is responsible for all maintenance work.

DEP records and reports the number and duration of events that cause a discharge during dry weather conditions.

(d) CSO maintenance and inspection program reports shall be available for DEC review no later than 9 AM on the day following the day of the inspection was conducted and shall be available for DEC review at the associated WPCP no later than 30 days following the inspection

Maintenance and Inspection Reports

The CSO maintenance and inspection program reports are kept at each respective crew quarters and are available for DEC by 9:00 AM on the day following an inspection. Rather than store these reports at WPCP's where they may get misplaced, we have centralized the storage into 5 collection crew quarters.

These crew quarters are located as follows:

Tallman Island WPCP
Wards Island WPCP
Paedergat Pump Station
Gowanus Pump Station
Oakwood Beach WPCP

We believe this record storage policy is more condusive to record retention and retrieval than storing at WPCP's, many of which are undergoing massive upgrades.

REGULATOR and TIDE GATE Inspection Log

Regulator Truck # : _____ Backup Truck # : _____

DATE: _____ RUN : _____ WEATHER : _____

	Regulator Tide Gate Number	Inspection Level 1 / 2 / 3 ?	Inspection y / n Diversion	Inspection Of Regulator	Inspection y / n Tide Gate
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					

Reporting System for Regulator and Tide Gate Locations

INSPECTION LEVEL :

LEVEL 1):	Diversion, Regulator and Tide Gate Manhole Inspections performed from above ground which DO NOT involve entry into regulator or tide gate chambers
LEVEL 2) :	FULL ENTRY Regulator and Tide Gate inspections which DO NOT involve the use of back - up trucks
LEVEL 3) :	FULL ENTRY Regulator and Tide Gate inspections which DO involve the use of back - up trucks

REGULATOR CHAMBERS :

A 1):	Regulator flow O.K. No visible flow obstruction through regulator. Gate operational in automatic mode.
A 2):	Regulator flow O.K. No visible flow obstruction through regulator. Gate operational in manual mode ONLY ! **Explanation of problem required on log sheet**
A 3):	Regulator flow O.K. No visible flow obstruction through regulator. Gate NOT OPERATIONAL ! **Explanation of problem required on log sheet**
A 4):	Partial Blockage in Regulator. When flow through regulator is partially obstructed by debris, which may result in dry weather by-passing **Explanation required**
A 5):	Blockage in Regulator causing partial or full dry weather by-passing. **Explanation of problem required on log sheet**

TIDE GATE CHAMBERS :

INSPECTIONS DURING HIGH TIDE :

B 1):	No leak from TIDE GATE. When the gate is properly closed and there is no tidal flow
B 2):	Minor leak from TIDE GATE. When tidal inflow is small and acceptable.
B 3):	Mild leak from TIDE GATE. When tidal inflow is noticeably higher than a Minor leak.
B 4):	MAJOR LEAK from TIDE GATE. When tidal inflow is significantly high and may impact treatment plant processes with high chlorides

INSPECTIONS DURING LOW TIDE :

C 1):	No leak from TIDE GATE. When the gate is properly closed and there is no evidence of any potential tidal inflow problem.
C 2):	TIDE GATE is visibly held open by DEBRIS or FROZEN HINGES etc. **Explanation of problem required on log sheet**
C 3):	TIDE GATE Vulnerable to inflow. When gate is closed, damaged seals, warping or other factors likely to allow leakage. **Explanation of problem required on log sheet**

S.S.T.W. : _____ S.E.E. : _____ S.S.E.E. _____ CHIEF : _____

Appendix A

Appendix 1.2: EXHIBIT 2 -ROCKAWAY SANITARY AND STORM SEWER PROJECTS

Appendix 1.2.1: Completed Projects

Project No. Locations Status

PS-312Q Beach Channel Completed in Sept-2017

SEQ-002516/ 200352 Cornaga Ave. Completed in Jun-2006, part of QED965

SE-196/372 Camp Road, etc. Completed in Jun-1991

SE-378A/379A B. 130th Street, etc. Completed in Mar-1989

SE-378B/379B Rockaway Beach Blvd. etc. Completed in Nov-1998

SE-422A/423A B. 121st Street, etc. Completed in Jun-1989

SE-422B/423B B. 123rd Street, etc. Completed in Apr-1990

SE-422C/423C B. 127th Street, etc. Completed in Apr-1991

SE-424A/425A B. 132nd Street, etc. Completed in Apr-1993

SE-426A/427A B. 135th Street, etc. Completed in Dec-1990

SE-426B/427B B. 138th Street, etc. Completed in Nov-1990

SE-426C/427C B. 140th Street, etc. Completed in Jun-2003

SE-424B/425B B. 134th Street, etc. Completed in Aug-1999

SE-426C/427C Beach 69th St. Completed in Jan-2003

SE-772/87HW Formerly SEQ-200350 Beach 71st Str. Completed in Dec-2004

SE-789 / HWQ631B1 Sommerville Area. Completed in May-2014

SE-795 Chandler St. Completed in Jun-2017

SE-817 Beach 29th St. Completed in Aug-2015

SEQ- 002546/ 200425 Grandview Terrace. Completed in Mar-2004

SEQ- 200358 Beach 87th St. Completed in Sep-2002

SEQ- 200368 Redfern Ave. Completed in Jun-2006

SEQ-002348 Rockaway Blvd., etc. Completed in May-1997

SEQ-002355 Beach 43rd Street, etc. Completed in Apr-1991

SEQ-002363 Beach 37th Street, etc. Completed in Apr-1996

SEQ-002380 Rockaway Beach Blvd. Completed in Nov-1996

SEQ-002402 Beach 45th Street, etc. Completed in Sep-1997

SEQ-002413/ 200275 R. Collier Avenue, etc. Completed in Mar-2005

SEQ-002426 Bay 25th Street, etc. Completed in Sep-1998

SEQ-002427 Cold Spring Road, etc. Completed in May-1998

SEQ-002428 Healy Avenue, etc. Completed in Jan-2000

SEQ-002460 West Bourne Ave, etc. Completed in Nov-2000

SEQ-002499 Beach 61st St. Completed in Sep-2000

SEQ-002511/ 200347 Beach 36th St. Completed in Jan-2003

SEQ-002538/ 200371 Beach 18th St. Completed in Aug-2003

SEQ-002550/ 200390 Beach 40 St. (Edgemere Phase HD153B) Completed in Nov-2005

SEQ-002551/ 200398 (HD153B1) Edgemere Phase B1. Completed in Jun-2007

SEQ-002571/ 200412 Hope VI Phase A. Completed in Apr-2004

SEQ-02479/ QED-983/ SEQ-200341 Rockaway Beach Blvd. Completed in Sep-2014

SEQ-200239 Rockaway Freeway, etc. Completed in Aug-1996

SEQ-200240 Rockaway Freeway, etc. Completed in Aug-1996

SEQ-200251 Rockaway Beach Blvd. Completed in May-1997

SEQ-200254 Beach 108th Street, etc. Completed in Nov-1998

SEQ-200305 Amstel Blvd, etc. Completed in May-2000

SEQ-200311 Beach 35th St. Edgemere Completed in Apr-2002

SEQ-200378 Seagirt Blvd. Completed in Sep-2002

SEQ-200453 Thursby Ave. Completed in Jun-2007

SEQ-200508 Beach 32nd St. Completed in Jun-2015

SEQ-200523 New Haven Avenue, etc. Completed in Aug-2013

SEQ-200524 Beach 21st St. Completed in April-2020

SEQ-200533 Beach 42nd St. Completed in Jun-2012

HD153C1/ SEQ002562/ SEQ200406 Edgemere C1. Completed in Nov-2016

HD153C2/ SE-Q200421/ SEQ-002576 Edgemere C2. Completed in Sep-2014

HD153C1/ SEQ-200406/ 2562 Edgemere C1. Completed in Apr-2009

HWQ-631 Beach 72 St. Completed in Dec-2004

SEQ-002442 Burchell Ave. Completed in Jun-2000

SEQ-002443 Beach 87 St. Completed in Apr-2000

SEQ-200251 Rockaway Beach Blvd. Completed in May-1997

SEQ-0201A6 Burchell Ave. Completed in May-2001

SEQ-0201A7 Beach 67 St. Completed in Aug-2002

SEQ-0201B3 Beach 86 St. Completed

SE-569U Thursby Ave. Completed in May-2004

SE-569V Almeda Ave. Completed in May-2005

SE-569W Shore Front Parkway. Completed in May-2006

SE-569Y Beach 80 St. Completed

SEQ-0201B5 Beach 113 St. Completed

SEQ-201BS4 Beach 87th St. Completed

SEQ-201BS2 Beach 114 St. Completed

SEC-20004I Seaside Ave. Completed

SEQ-200381R Beach 53 St. Completed in Mar-2004

HWQ-230GR Cornaga Ave. Completed in Sep-2005

HWQ-1126A Almeda Ave. Completed in Apr-2004

SEQ-002413R Collier Ave. Completed in Mar-2005

QED-973 Rockaway Turnpike. Completed in Jul-2002

SE-196B Camp Road. Completed in Jun-1998

SE-610 Granada Place. Completed in Dec-1996

SEQ-200364 Edgemere Ave. Completed in Apr-2003

QED-988 Channing Road. Completed in Jan-2007

SEQ-002623 Nameoke St. Completed in Jun-2007

SEQ-200550 Beach 99th St. Completed in May-2018

SEQ-002453 B. 47th Street, etc. Cancelled Dec-1997

SEQ-002507 Beach 69th St. Cancelled, included SEQ-200356 in HWQ641 completed Dec-2004

SEQ-200381 Beach 53th St. Cancelled due to LIPA issues, was scheduled for FY 2002

HWQ1682/SE-884 Shore Front Parkway. Cancelled Mar-2015

QED982/ SANDHW13 Rockaway Beach Blvd. & B. 73rd St. Completed in June-2020

SEQ-200524 B. 21st St. Completed in June-2020

SEQ-200582/HWQ1182A Broad Channel Phase I. Completed in May-2020

Appendix 1.2.2: Active Projects

Project No. Locations Status

HWQ-1126C Rockaway Beach - on hold

SEQ-200426/ HWQ1126B Hope VI Phase B - on hold

SEQ-200595 / HWQ1187- Westbourne Norton Drive Reconstruction - Revising CPI, FY22

HD-153C3/ SEQ-002682 Edgemere C3 - on hold

SEQ-200597/ HWQ631B2 Somerville Area - CPI development, FY2023

SEQ-200598/ HWQ631B3 Somerville - CPI development, FY2026

SEQ200599/HWQ631B3 Somerville Area - CPI development, FY2029

SEQ-200586/HWQ1182B Broad Channel Phase II - Construction started 6/15/20, projected completion 6/14/24

QED-1007 Rockaway Beach Blvd. & B. 49 St. - Construction started 8/6/18, projected completion 8/4/21

SANDR02/SE-830 Far Rockaway Business District - Construction started 9/3/19, projected completion 8/17/22

SE-829 Brunswick Ave. - CPI development, FY2026

SE-886/HWQ1079 Beach Channel Dr. area - CPI development, FY2024

SE-887HWQ1079 Cornaga Ave area - CPI development, FY2027

SE-900 Beach 22 Street area – CPI development, FY2029

SANDR04 / QED-1044 Beach 108th Street - Construction started 4/20/20, projected completion 6/18/22

SANDHW11/ QED-1030 Beach Channel - Construction started 3/12/18, projected completion 6/3/21

SANDHW11B/QED1030B Beach Channel Phase 2 – CPI development, FY TBD

Appendix 1.3: TABLE 1 - 2020 12 MONTH ROLLING AVERAGE INFLUENT CHLORIDES (MG/L)

	Jan	Feb	Mar	Apr	Ma	June	July	Aug	Sep	Oct	Nov	Dec
Wards Island	460	450	450	460	480	480	480	470	460	440	450	450
North River	280	270	260	280	290	290	330	330	350	360	370	370
Hunts Point	520	500	500	510	530	510	510	520	540	540	530	530
26th Ward	390	390	370	360	370	370	350	310	290	270	260	240
Coney Island COMB	1,010	1,030	1,050	1,070	1,090	1,100	1,070	1,060	1,050	1,040	990	970
Coney Island CI INT	1,310	1,330	1,370	1,410	1,450	1,470	1,420	1,410	1,380	1,320	1,290	1,290
Owls Head	320	310	310	310	310	300	290	280	280	270	270	240
Newtown Creek	670	690	690	680	710	750	760	780	800	800	790	780
NC BK QNS	310	370	360	360	370	420	420	470	480	490	480	470
NC 13th ST	900	900	900	900	950	990	1010	1000	1040	1050	1040	1040
Red Hook	370	370	350	340	360	360	320	320	320	320	310	290
Jamaica	270	260	240	240	240	240	240	230	230	230	220	210
Tallman Island	330	310	300	310	320	330	330	330	320	310	310	300
Bowery Bay	400	350	360	510	620	670	720	710	710	640	620	600
BB LL	430	400	400	530	610	650	710	700	710	670	660	650
BB HL	380	330	340	490	620	680	730	720	700	620	590	570
Rockaway	2130	2180	2230	2310	2370	2400	2440	2510	2460	2430	2370	2330
Oakwood Beach	270	260	260	250	240	230	230	230	230	240	230	240
Port Richmond	430	450	450	440	450	470	460	460	460	480	490	480

(*) The chloride concentration action level for WRRFs is 400 mg/L with the exception of Rockaway that has a plant specific action level of 3,000 mg/L.

Appendix 1.4: TABLE 2: YEARLY AVERAGE TIDAL INFLOW COMPARISON FOR CY '19-'20

WPCP	JANUARY - DECEMBER 19		JANUARY - DECEMBER 20		VARIANCE (CY20-CY19)		REMARKS*			
	INFLOW (MGD)	% DWF	INFLOW (MGD)	% DWF	INFLOW (MGD)	% DWF				
WARDS ISLAND	4.8	2.6%	4.5	2.5%	-0.22	-0.1%	4.6% Decrease	-4.6%	Decrease	4.6
NORTH RIVER	2.2	2.2%	2.6	2.8%	0.33	0.6%	15% Increase	15.0%	Increase	15.0
HUNTS POINT	2.4	2.1%	2.6	2.1%	0.15	0.0%	6.1% Increase	6.1%	Increase	6.1
26th WARD	0.7	1.7%	0.4	1.0%	-0.28	-0.7%	38.6% Decrease	-38.6%	Decrease	38.6
CONEY ISLAND	3.4	3.6%	3.5	4.2%	0.09	0.6%	2.6% Increase	2.6%	Increase	2.6
OWLS HEAD	0.9	1.1%	0.7	0.9%	-0.20	-0.2%	22.1% Decrease	-22.1%	Decrease	22.1
NEWTOWN CREEK	5.6	2.9%	5.9	3.4%	0.28	0.6%	5% Increase	5.0%	Increase	5.0
RED HOOK	0.4	1.5%	0.3	1.2%	-0.12	-0.3%	31.1% Decrease	-31.1%	Decrease	31.1
JAMAICA	0.9	1.2%	0.7	0.9%	-0.21	-0.2%	22.8% Decrease	-22.8%	Decrease	22.8
TALLMAN ISLAND	0.8	1.3%	0.7	1.2%	-0.11	-0.1%	14.2% Decrease	-14.2%	Decrease	14.2
BOWERY BAY	1.4	1.6%	2.1	2.4%	0.72	0.8%	50.2% Increase	50.2%	Increase	50.2
ROCKAWAY	1.9	8.9%	2.2	10.1%	0.31	1.2%	16.5% Increase	16.5%	Increase	16.5
OAKWOOD BEACH	0.3	1.0%	0.2	0.9%	-0.08	-0.1%	24.5% Decrease	-24.5%	Decrease	24.5
PORT RICHMOND	0.5	2.1%	0.6	2.4%	0.04	0.3%	7.4% Increase	7.4%	Increase	7.4

WRRF Dry Weather Flows (MGD)			
WRRF	CY2019	CY2020	Variance
WARDS ISLAND	182	180	-1.2%
NORTH RIVER	102	91	-10.5%
HUNTS POINT	116	121	4.5%
26th WARD	42	43	2.2%
CONEY ISLAND	95	84	-11.5%
OWLS HEAD	82	82	0.3%
NEWTOWN CREEK	195	172	-12.0%
RED HOOK	26	23	-12.2%
JAMAICA	79	77	-2.6%
TALLMAN ISLAND	59	55	-6.1%
BOWERY BAY	90	90	-0.5%
ROCKAWAY	21	22	2.4%
OAKWOOD BEACH	31	26	-15.2%
PORT RICHMOND	26	24	-6.7%
			-4.88%

WRRF Influent			
WRRF	CY2019	CY2020	Variance
WARDS ISLAND	465	449	-3.4%
NORTH RIVER	284	365	28.4%
HUNTS POINT	523	532	1.6%
26th WARD	391	235	-39.9%
CONEY ISLAND	976	1131	15.9%
OWLS HEAD	309	240	-22.4%
NEWTOWN CREEK	653	779	19.3%
RED HOOK	368	288	-21.5%
JAMAICA	269	213	-20.7%
TALLMAN ISLAND	327	298	-8.7%
BOWERY BAY	396	598	50.9%
ROCKAWAY	2050	2333	13.8%
OAKWOOD BEACH	264	235	-11.0%
PORT RICHMOND	417	480	15.2%
			6.31%

Receiving Waters								
WRRF	CY2019	CY2020	East River	Harlem & Hudson	New York Bay	Jamaica Bay	Arthur and Kill Van Kull	Check
WARDS ISLAND	17,800	17,800	40%	60%				100%
NORTH RIVER	13,000	13,000		100%				100%
HUNTS POINT	25,000	25,000	100%					100%
26th WARD	23,000	23,000				100%		100%
CONEY ISLAND	27,000	27,000			80%	20%		100%
OWLS HEAD	28,000	28,000			100%			100%
NEWTOWN CREEK	22,600	22,600	80%	20%				100%
RED HOOK	25,000	25,000	100%					100%
JAMAICA	23,000	23,000				100%		100%
TALLMAN ISLAND	25,000	25,000	100%					100%
BOWERY BAY	25,000	25,000	100%					100%
ROCKAWAY	23,000	23,000				100%		100%
OAKWOOD BEACH	26,400	26,400			80%		20%	100%
PORT RICHMOND	20,000	20,000					100%	100%

Receiving Water Salinity

Waterbody	WRRF	Salinity
East River	WI, TI, HP, BB, NC, RH	25,000
New York Bay	OH, CI, OB	28,000
Arthur & Kill Van Kull	PR	20,000
Harlem & Hudson River	NR	13,000
Jamaica Bay	JA, 26W, RK	23,000

Appendix 2:

Appendix 2.1: BWSO

- Appendix 2.1.1: Maps of Cleaning Activities for NYC DDC: TV Inspection and Cleaning
- Appendix 2.1.2: Maps of Cleaning Activities for CSI Section by Borough
- Appendix 2.1.3: Maps of Cleaning Activities for CSI Section by Community Board
- Appendix 2.1.4: CSI Sewer Inspection Cleaning List 2020

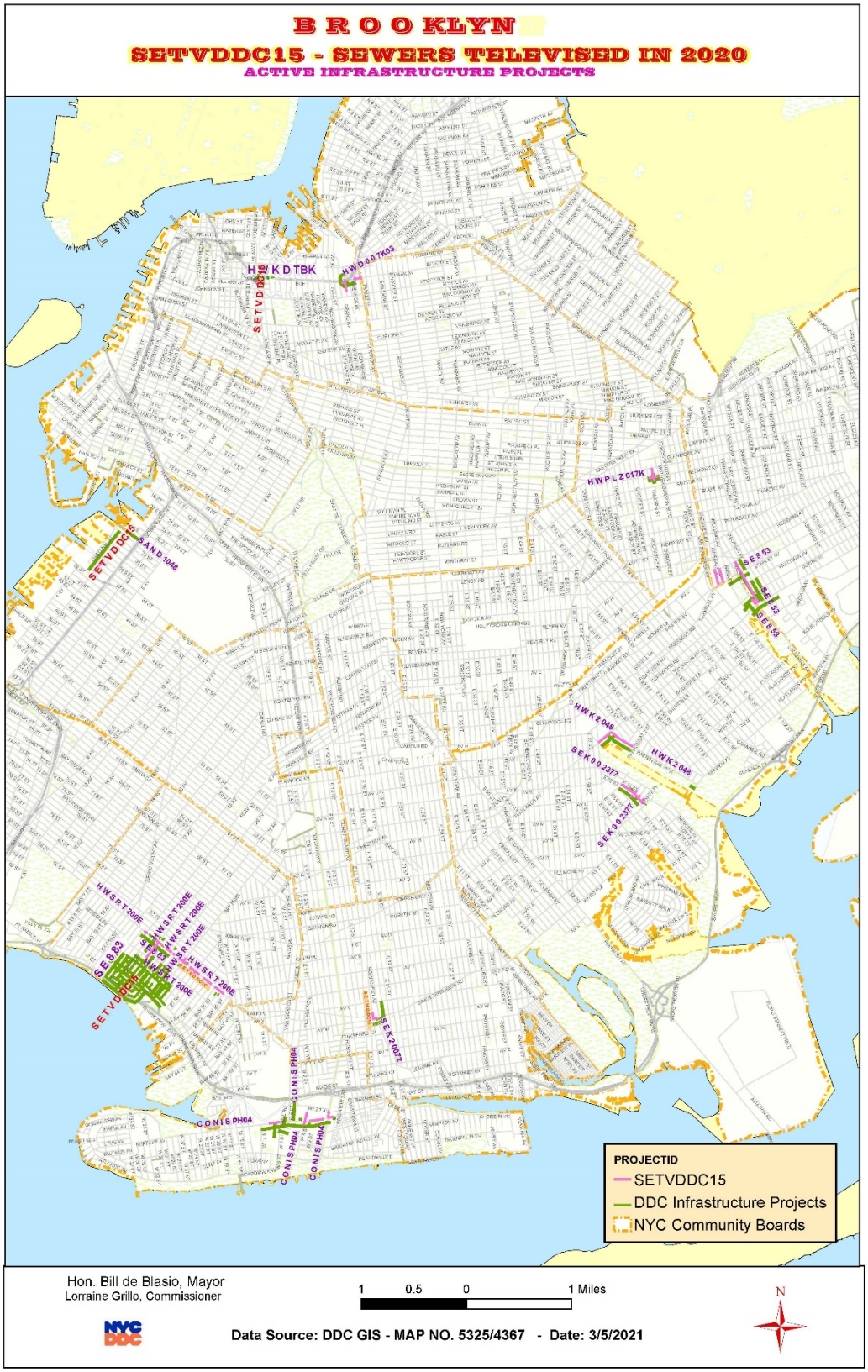
Appendix 2.2: BWT

- Appendix 2.2.1: Table 1 – Summary of 100 Telemetered Regulators
- Appendix 2.2.2: Table 2 – Sediments Removed from Non-Interceptor Assets
- Appendix 2.2.3: Table 3 – Intercepting Sewer Inspections 2019 – Pipe Rating Index and Ranking
- Appendix 2.2.4: Map 1 - 2019 BMP Interceptors and Local Sewers CCTV/SONAR, Pump Stations, Regulators and Interceptors/Local Sewers Cleaned Map

Appendix 2.1: BWSO

Appendix 2.1.1: Maps of Cleaning Activities for NYC DDC

Appendix 2.1.1.1: Brooklyn



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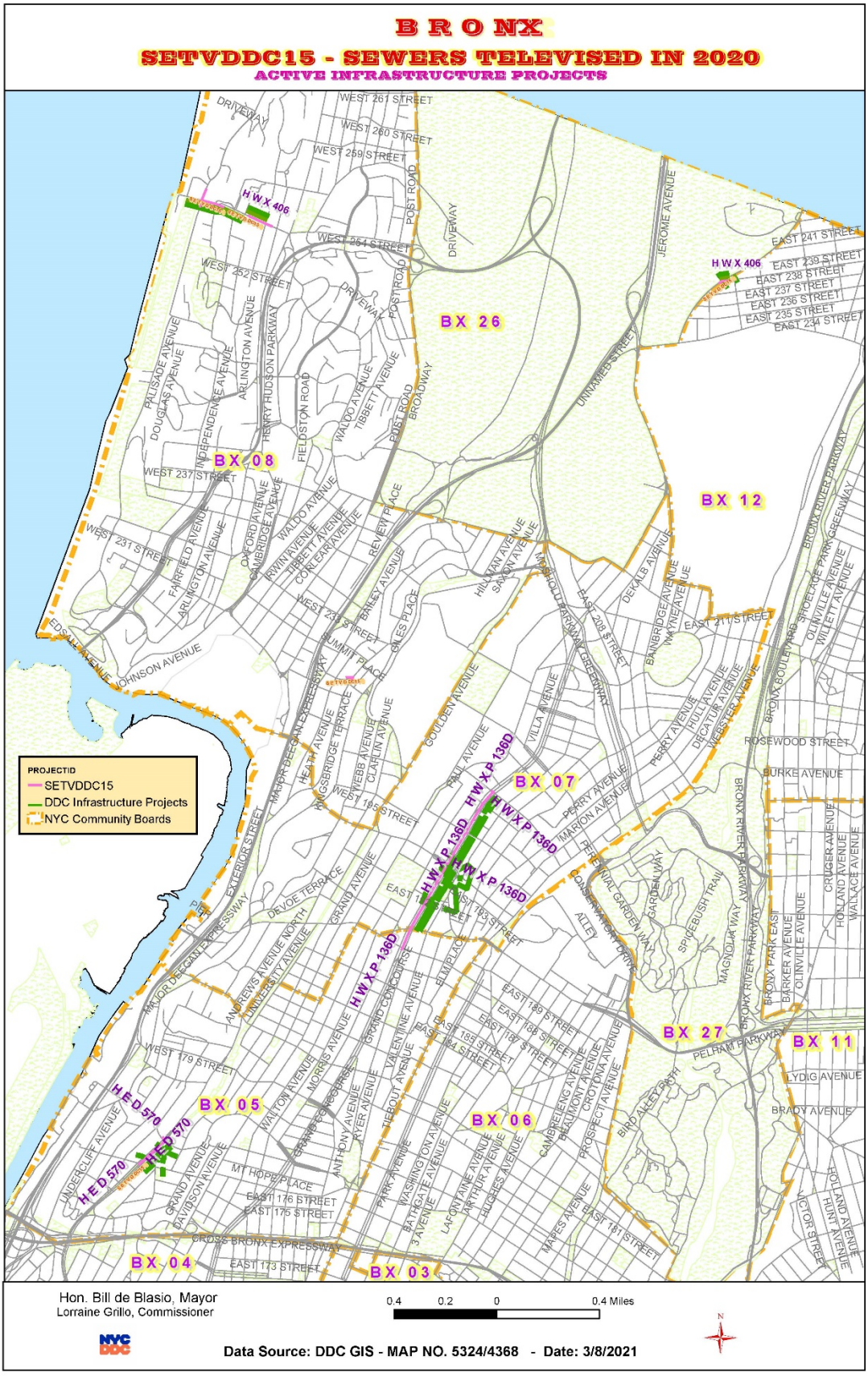
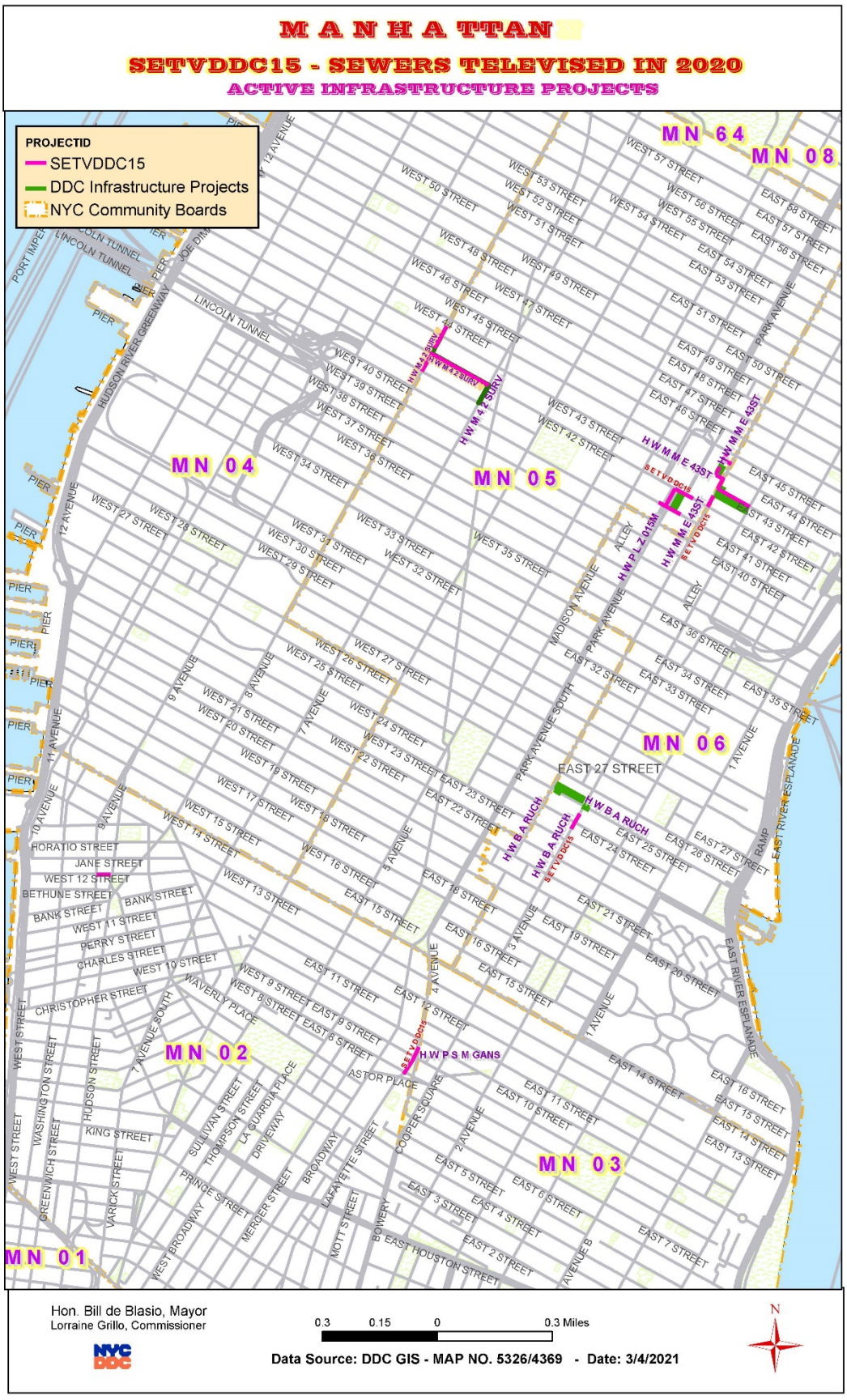
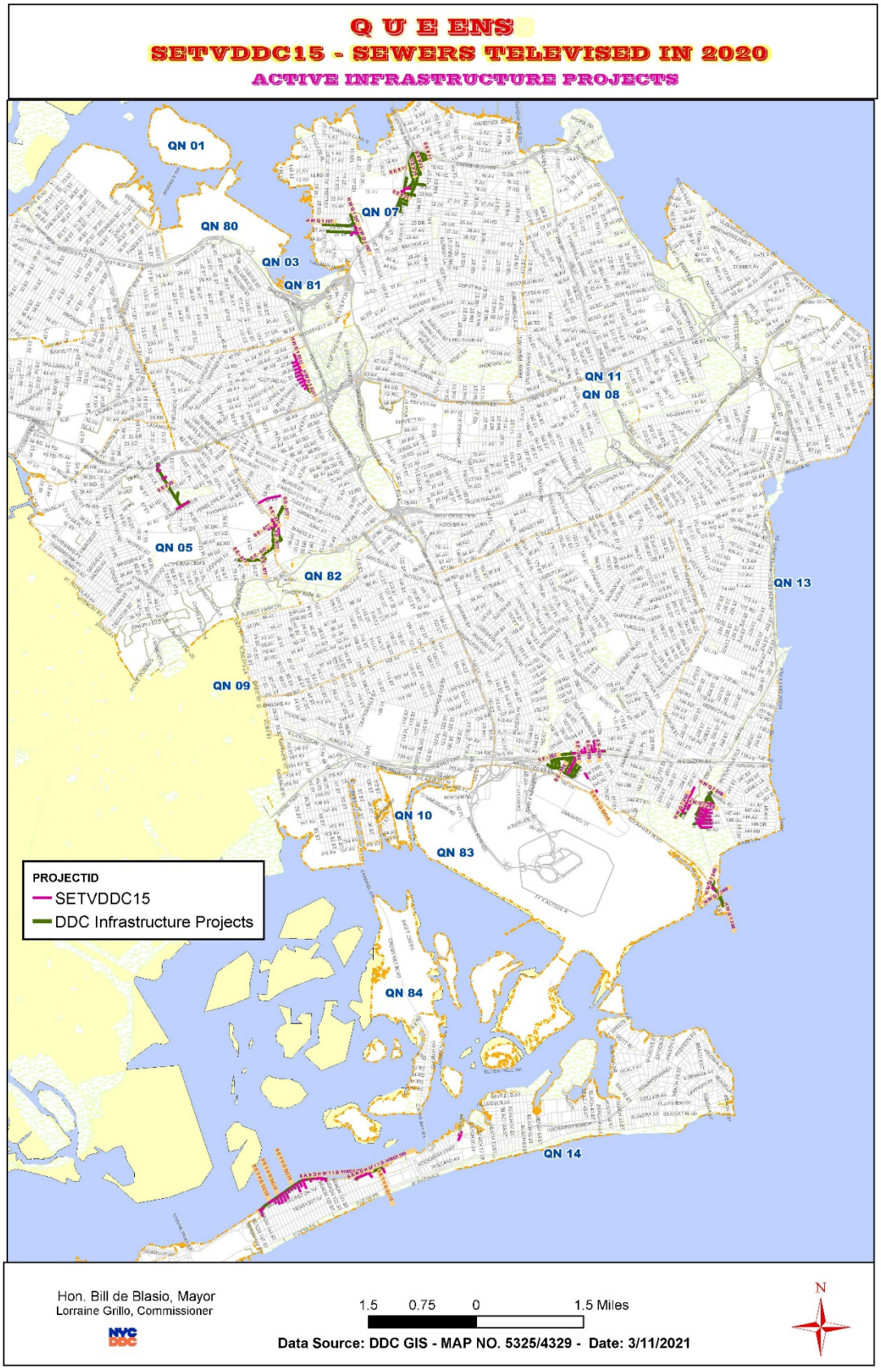


Appendix 2.1.1.3 Manhattan

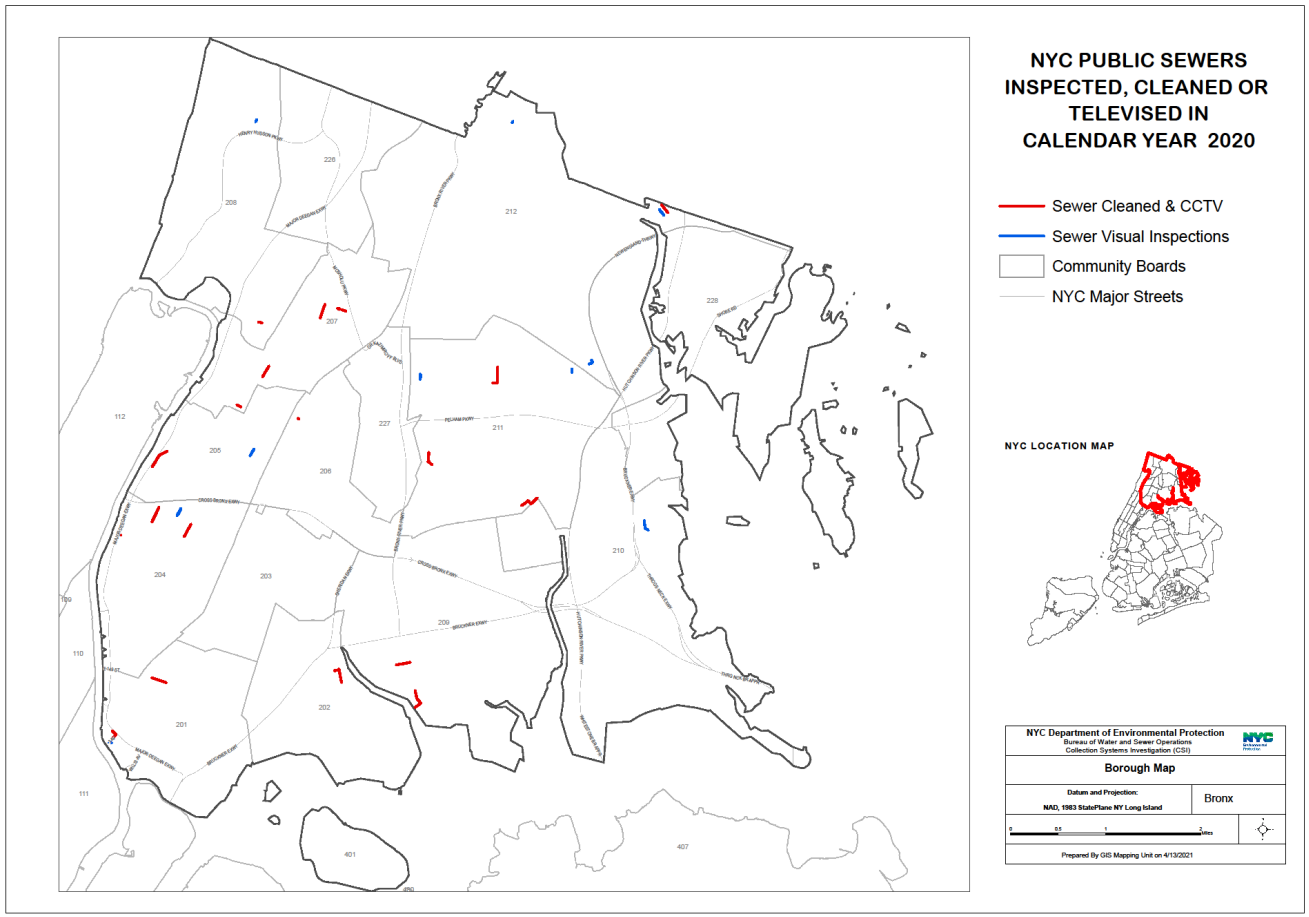


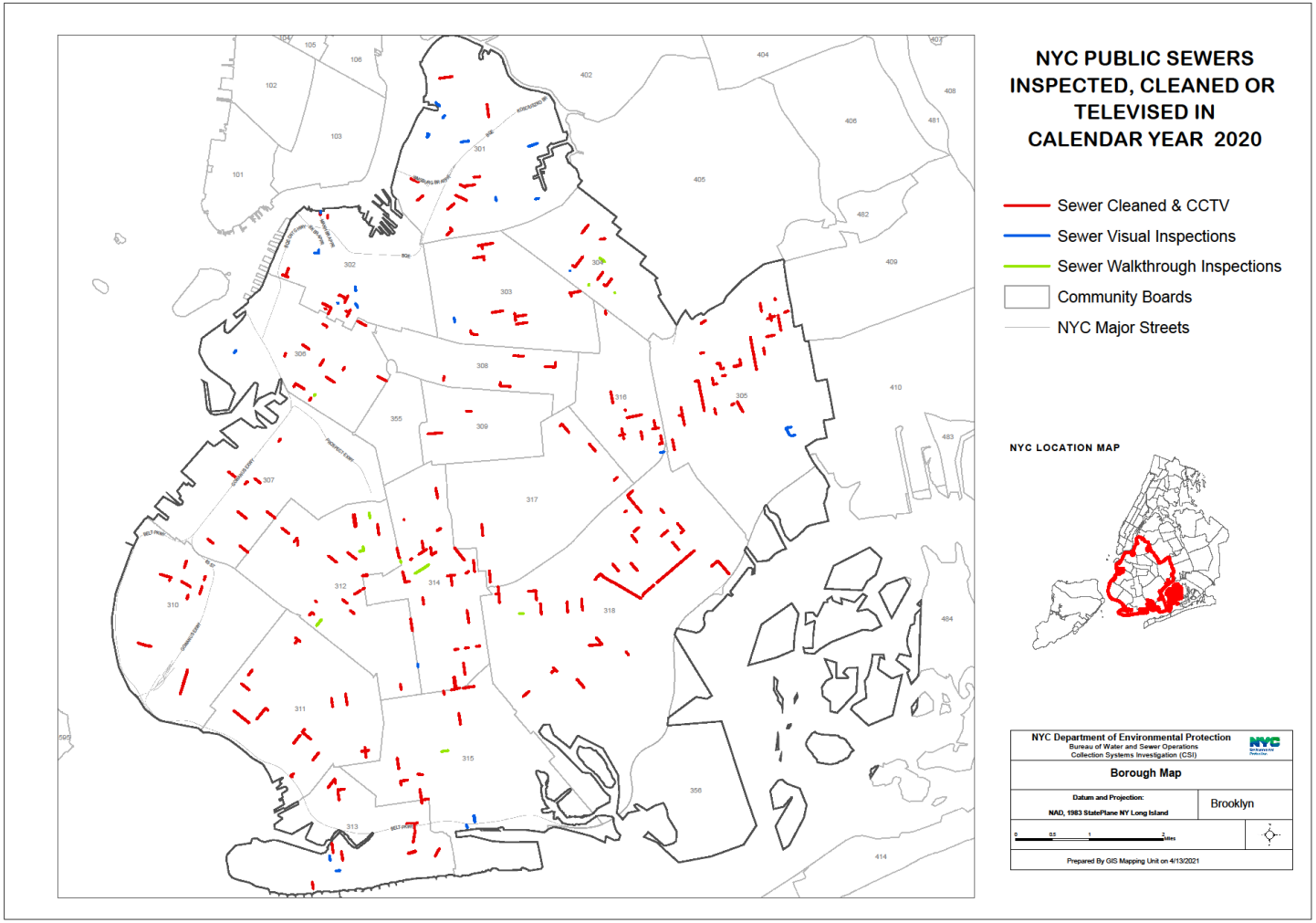
Appendix 2.1.1.4 Queens



Appendix 2.1.1.5 Staten Island

Appendix 2.1.2: Maps of Cleaning Activities for CSI Section by Borough

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Sewer Visual Inspections
Sewer Walkthrough Inspections
Community Boards
NYC Major Streets
NYC LOCATION MAP
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Collection Systems Investigation (CSI)
Borough Map
Datum and Projection:
NAD, 1983 StatePlane NY Long Island
Brooklyn
Prepared By GIS Mapping Unit on 4/13/2021

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2020

- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Community Boards
- NYC Major Streets

NYC LOCATION MAP

NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Collection Systems Investigation (CSI)

Borough Map

Datum and Projection:
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Manhattan

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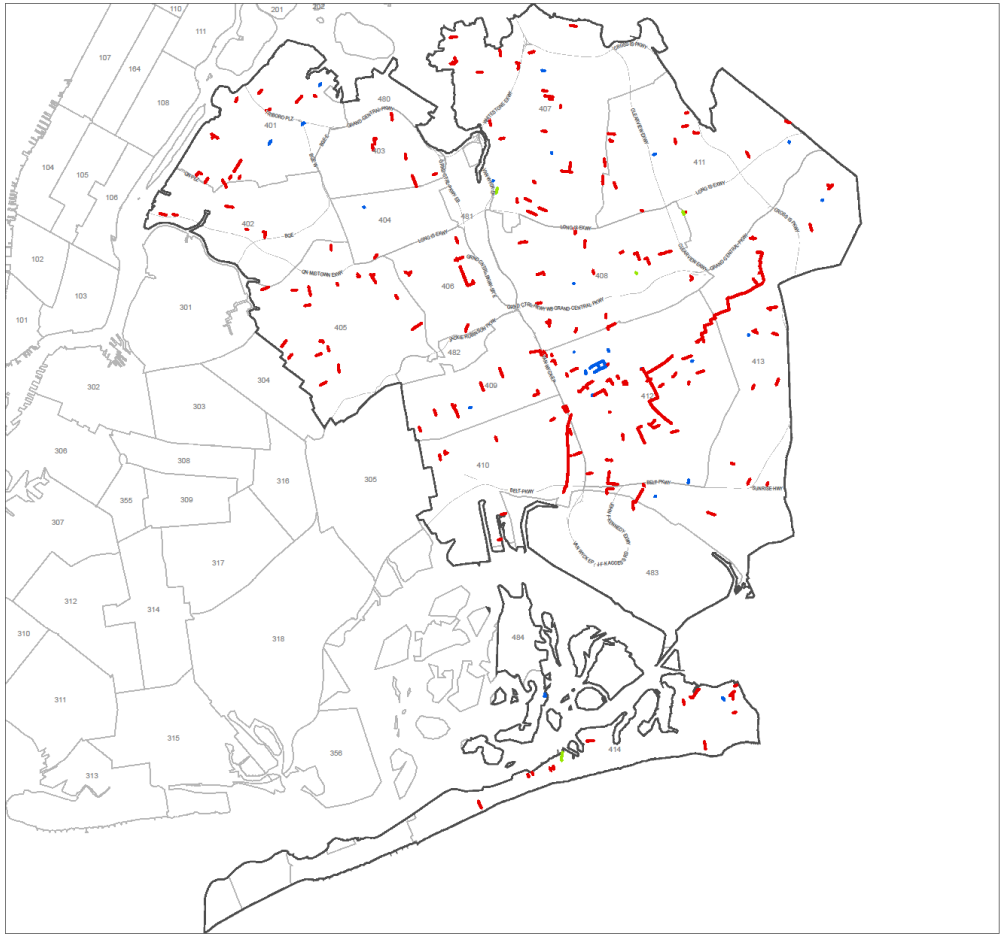

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- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Sewer Walkthrough Inspections
- Community Boards
- NYC Major Streets

NYC LOCATION MAP

NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Collection Systems Investigation (CSI)

Borough Map

Datum and Projection:
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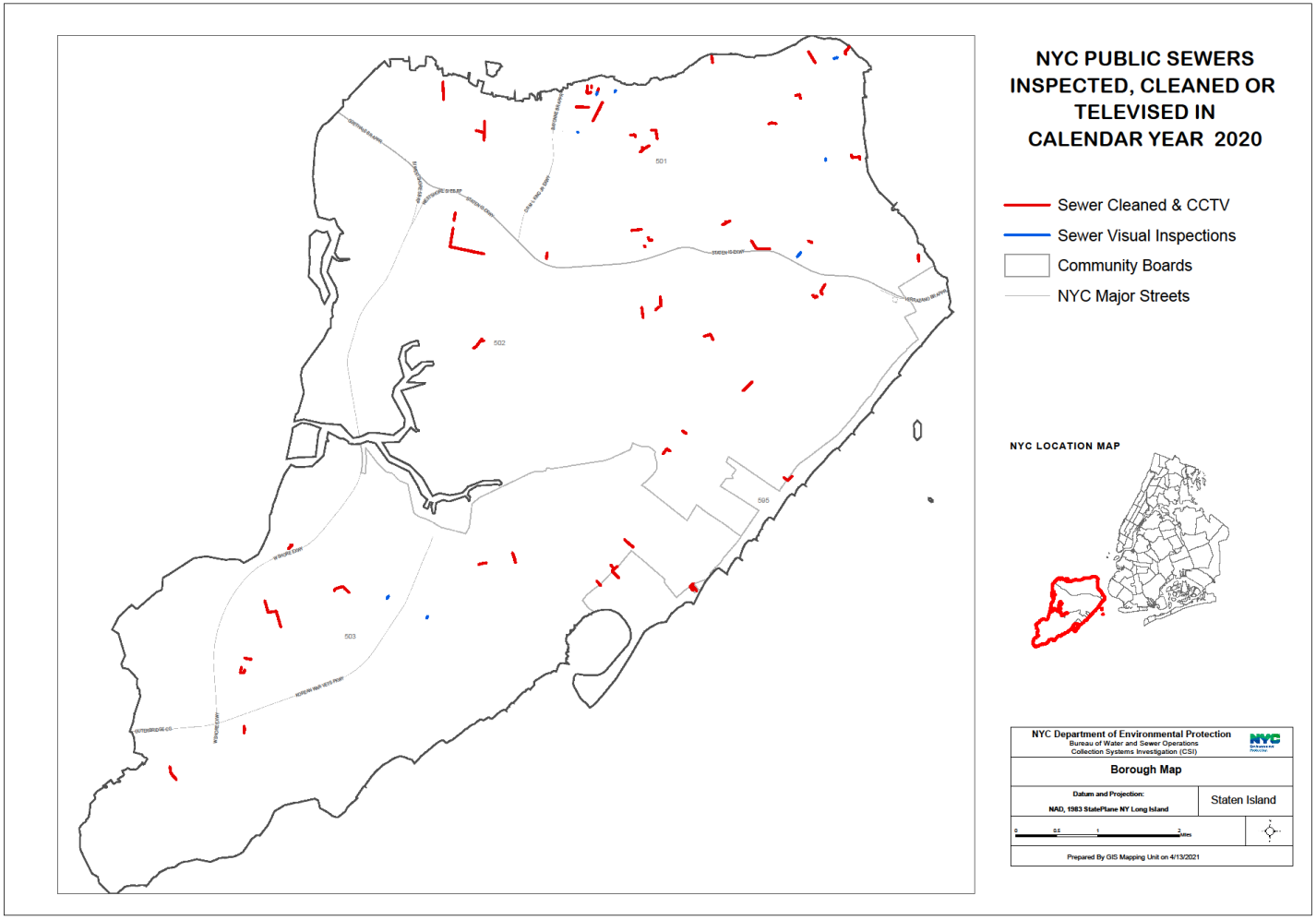
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NYC Major Streets
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NYC Department of Environmental Protection
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Collection Systems Investigation (CSI)
Borough Map
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Staten Island
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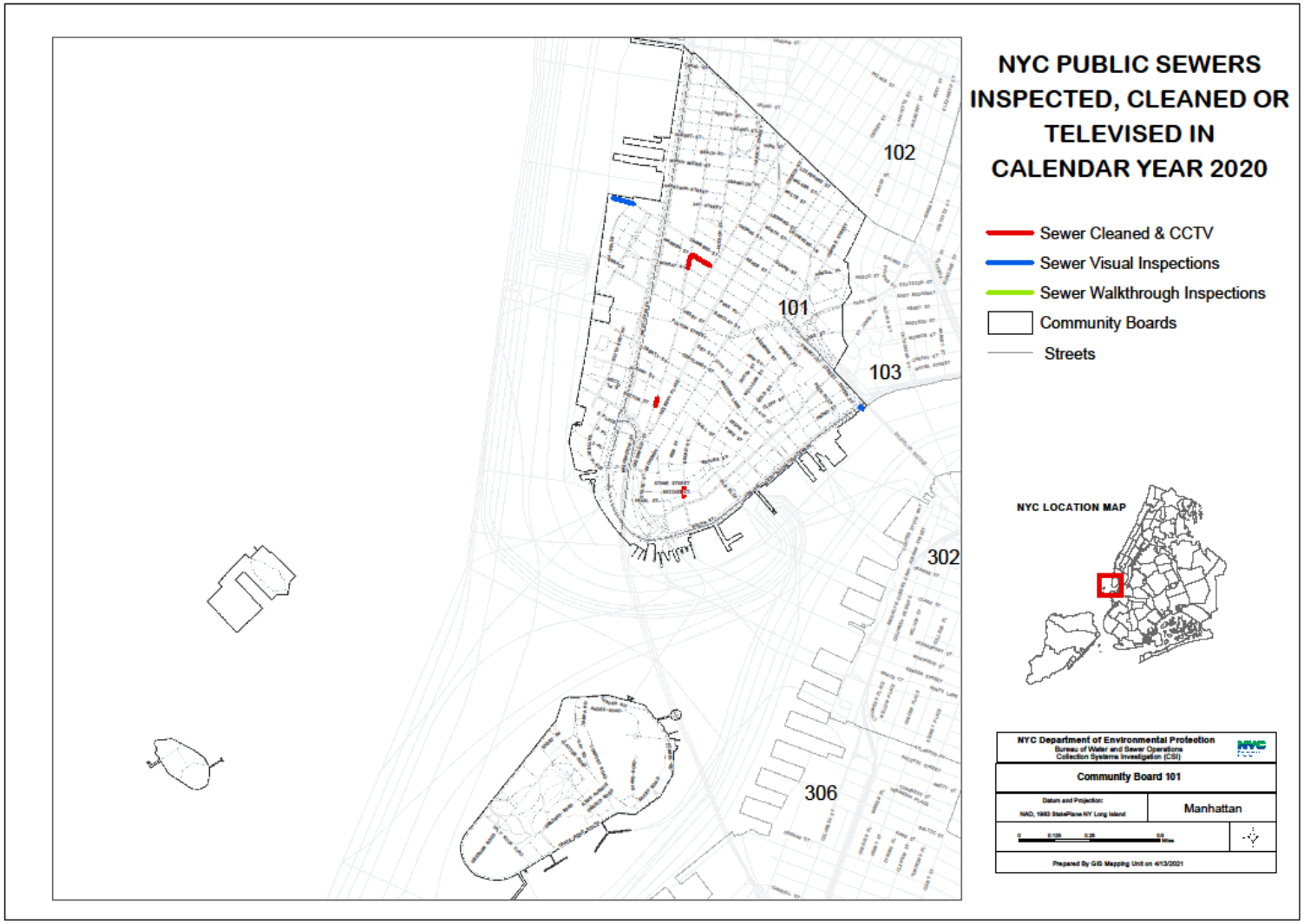
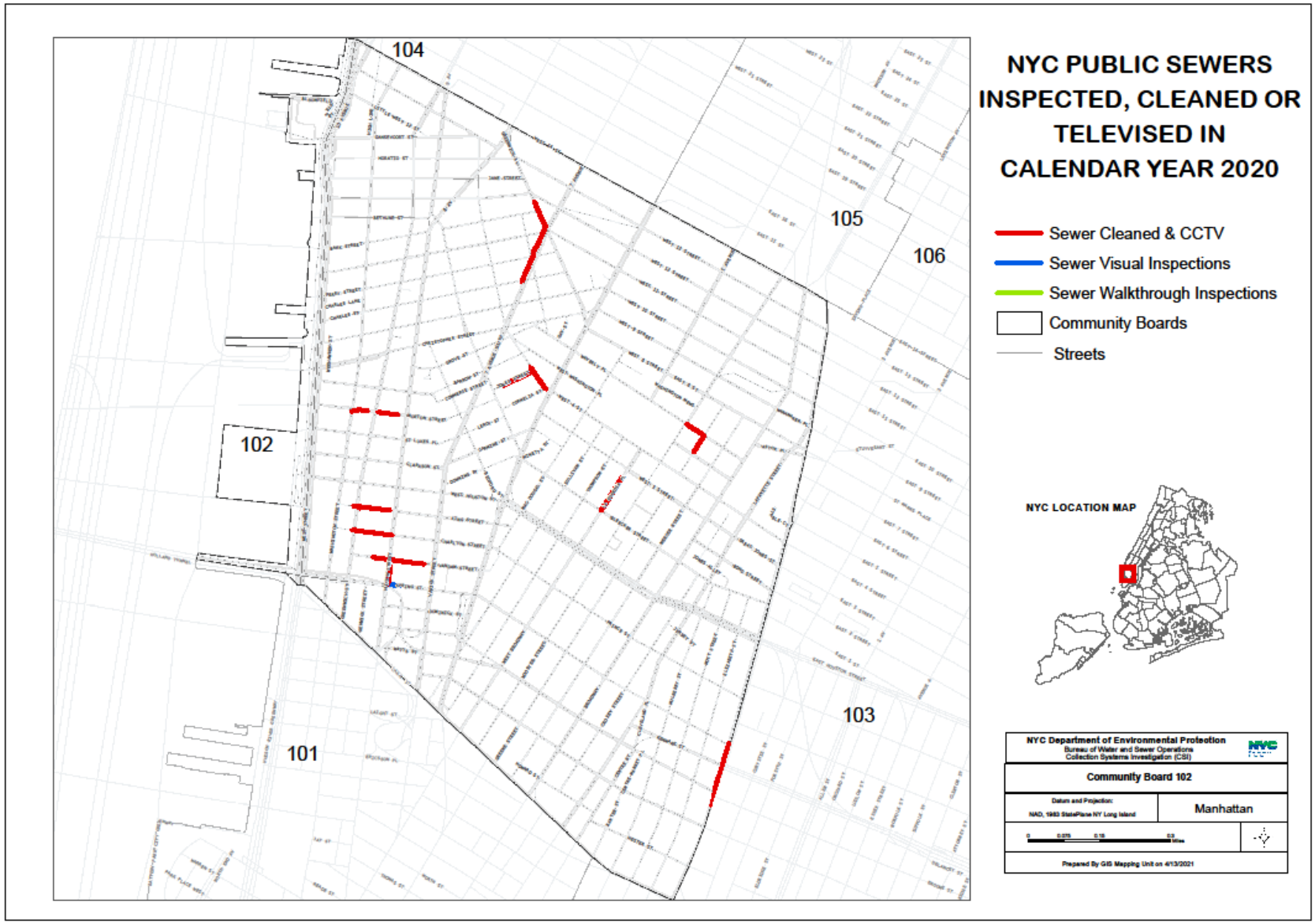
Appendix 2.1.3: Maps of Cleaning Activities for CSI Section by Community Board

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Community Board 102
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Manhattan
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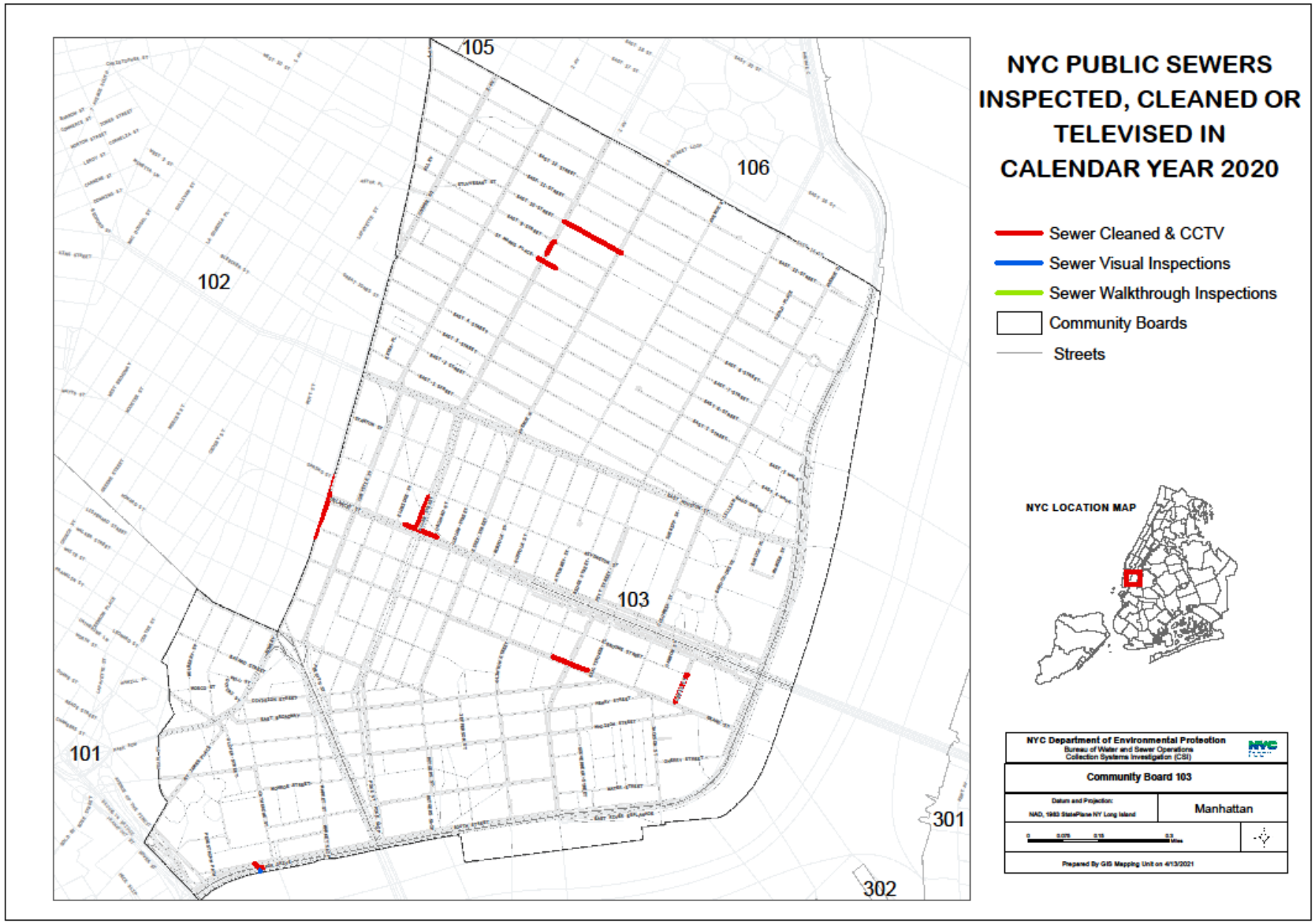
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Bureau of Water and Sewer Operations
Collection Systems Investigation (CSI)
Community Board 103
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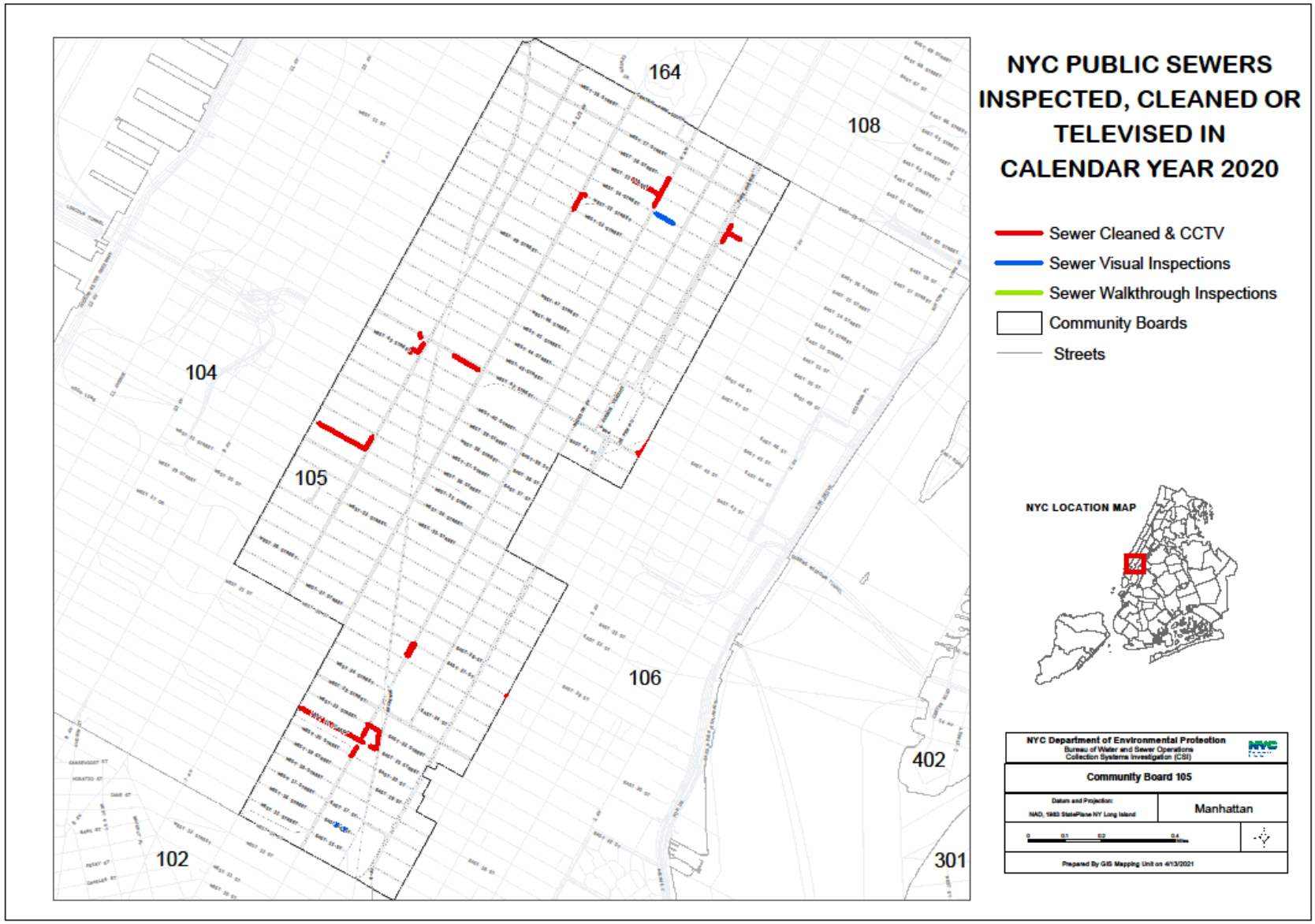
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Community Board 105
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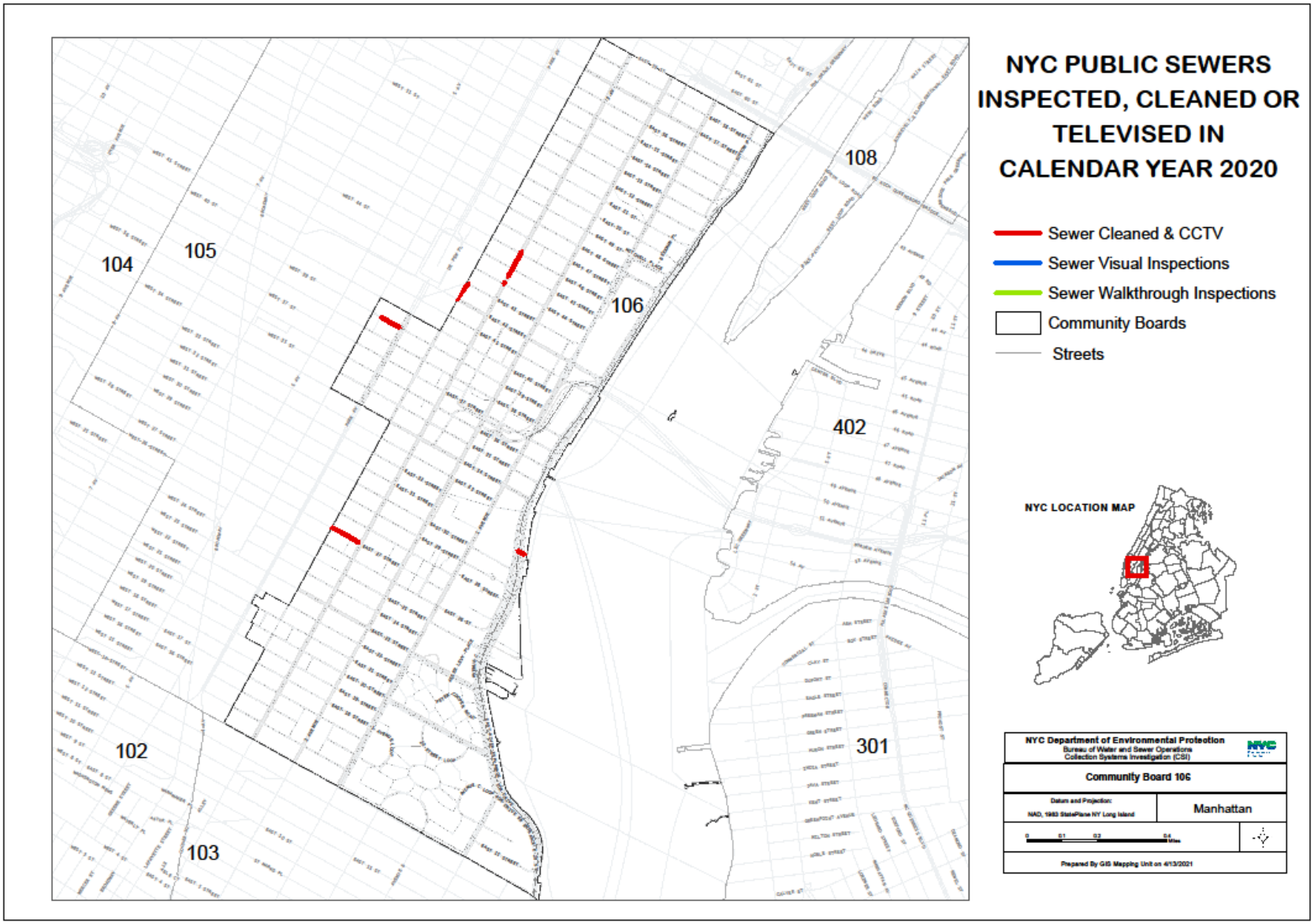
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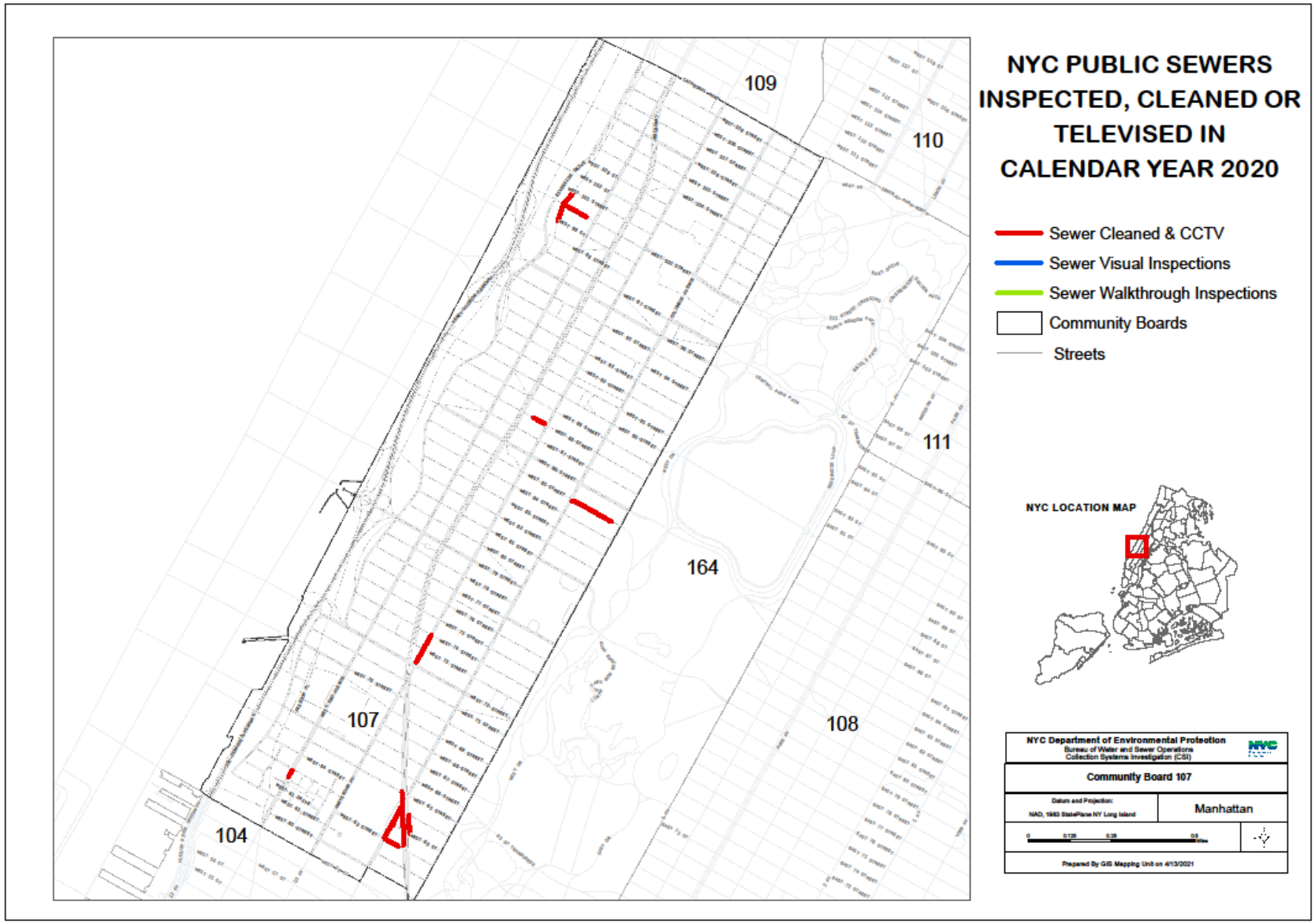
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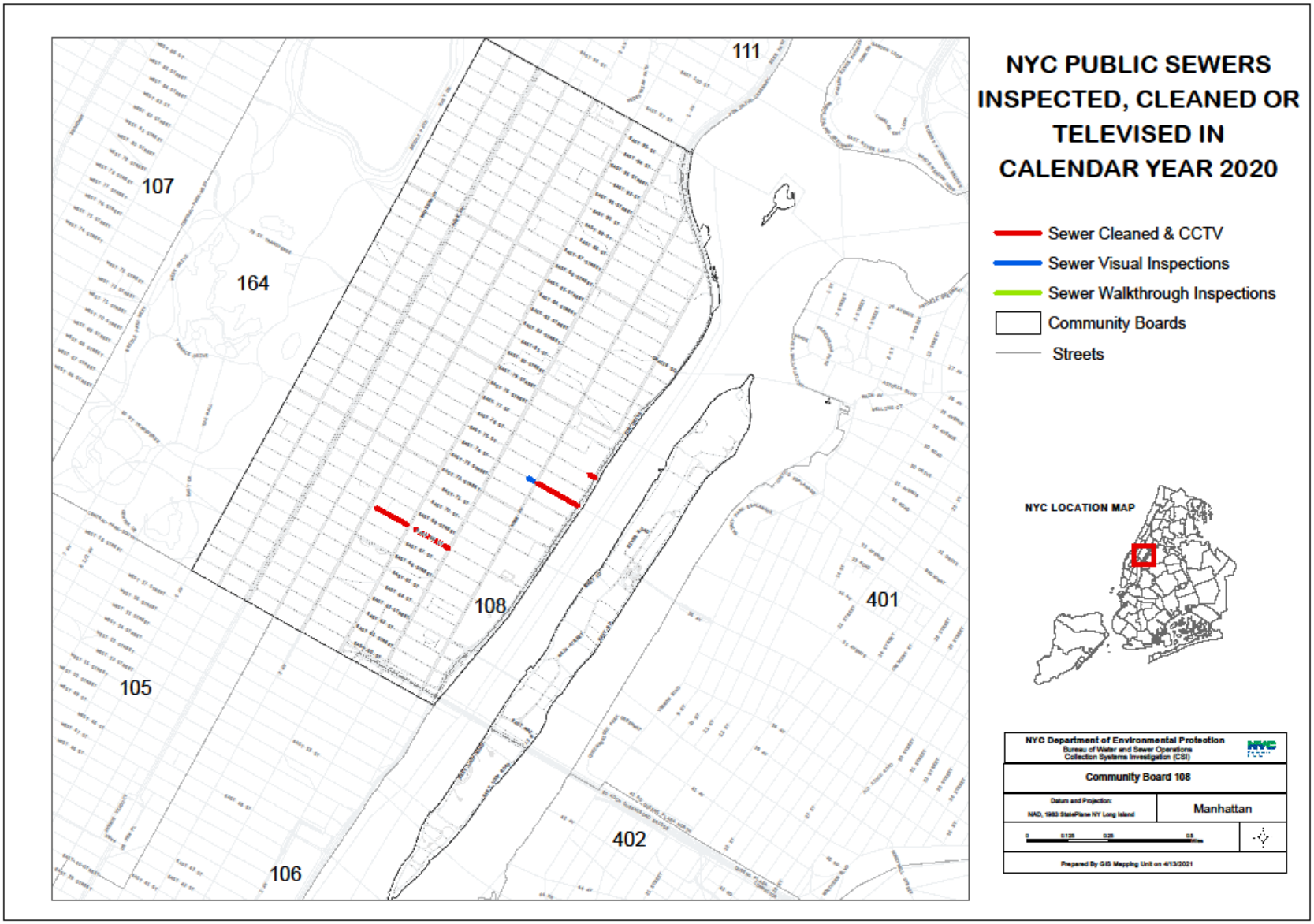
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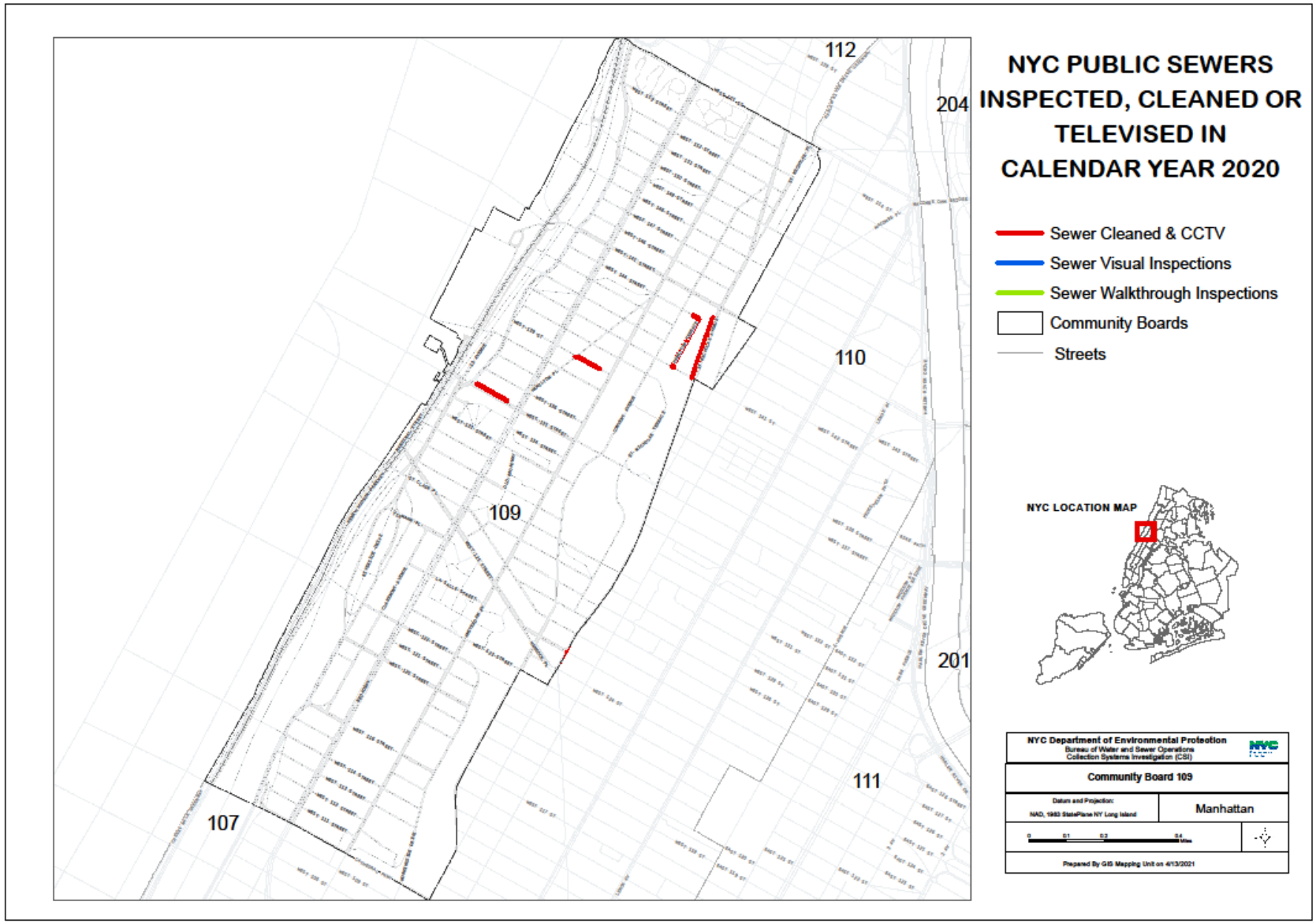
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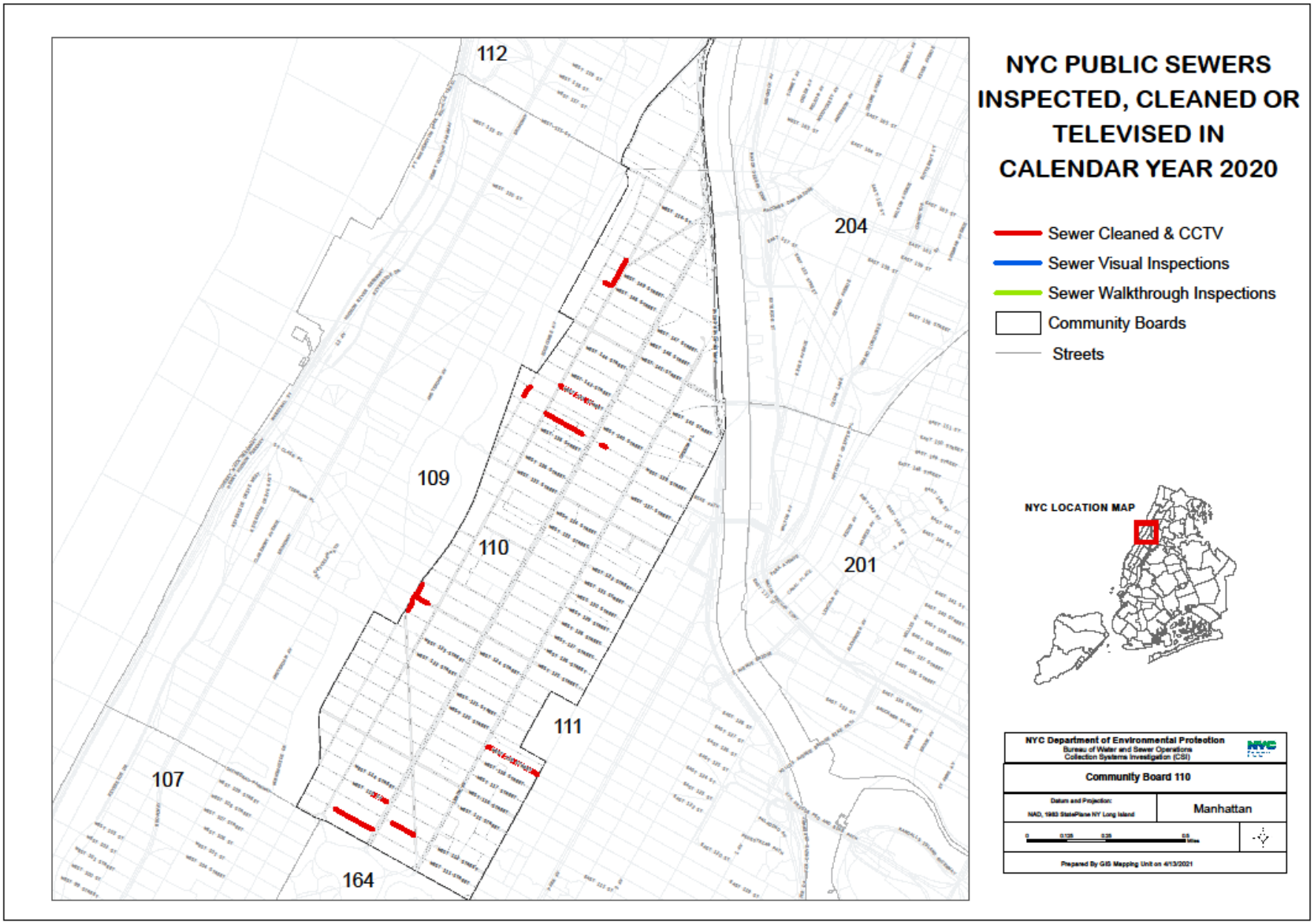
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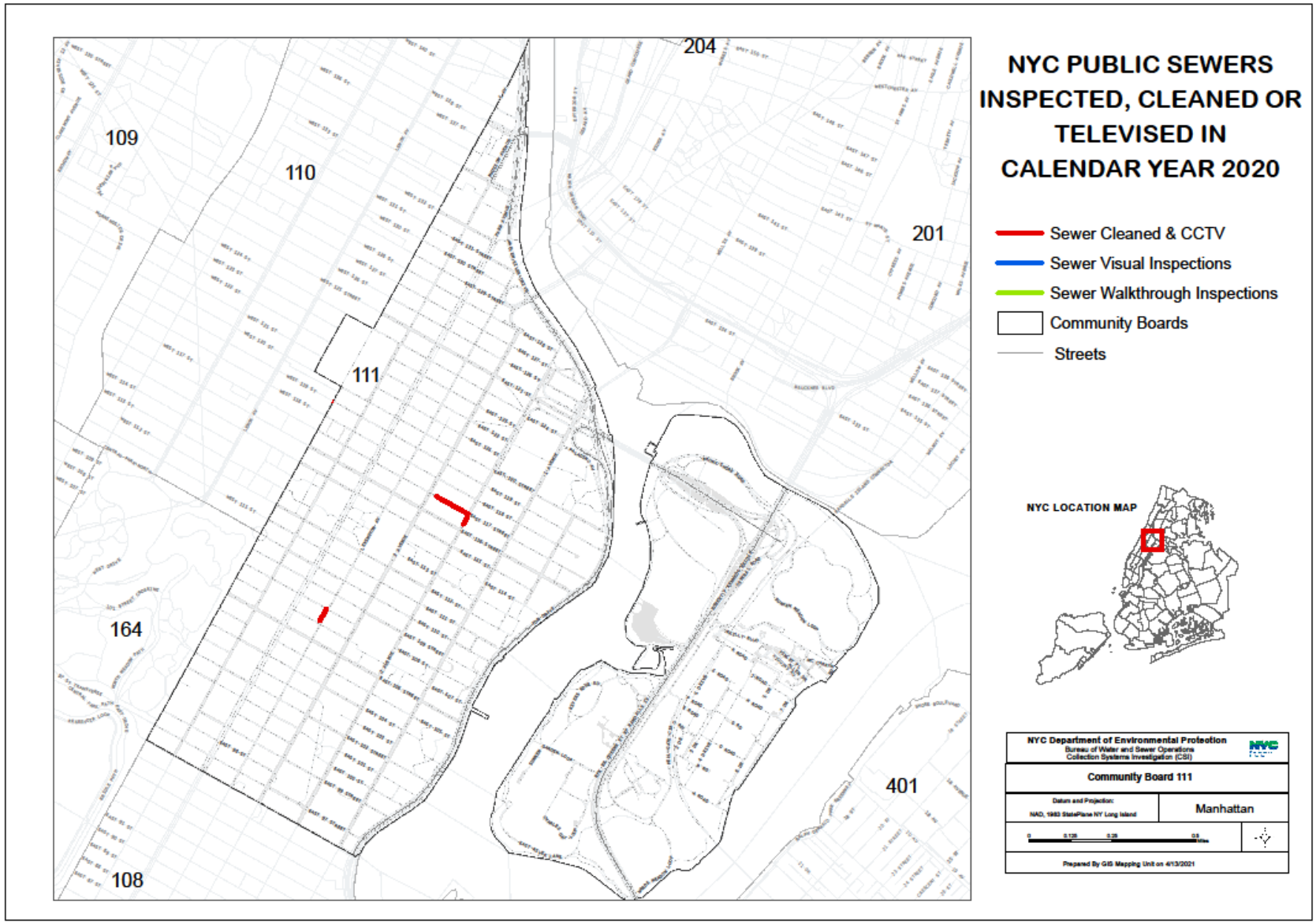
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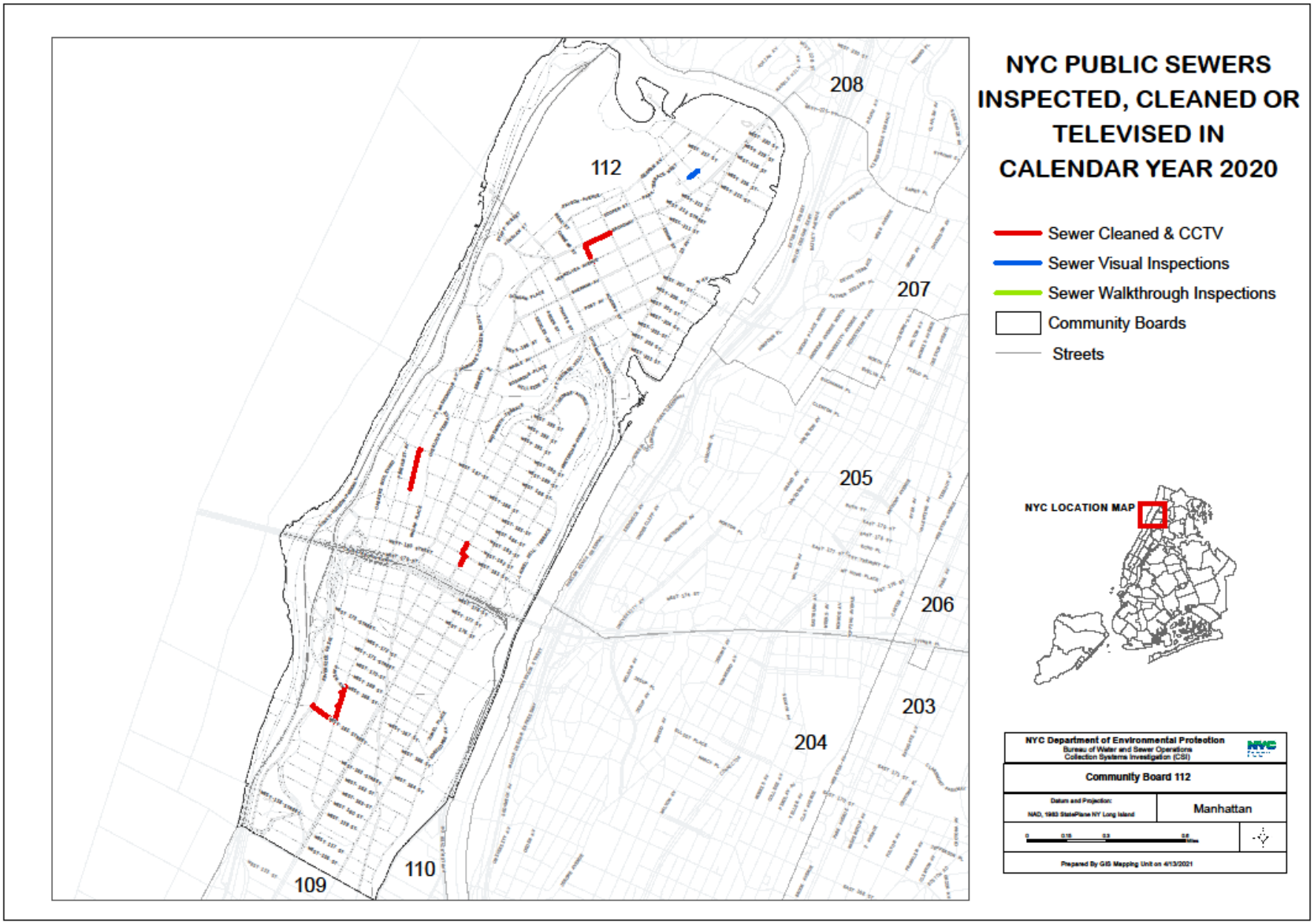
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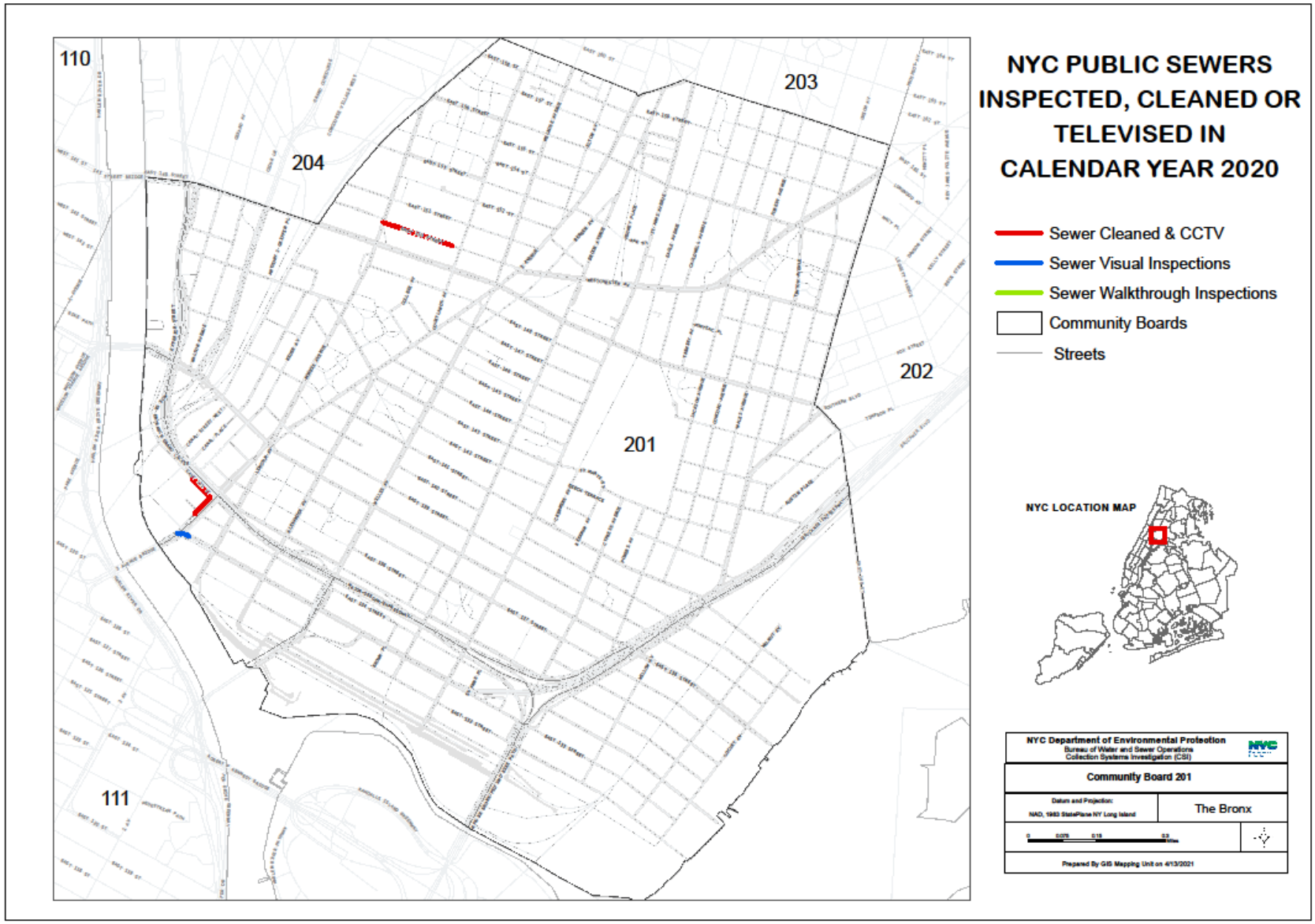
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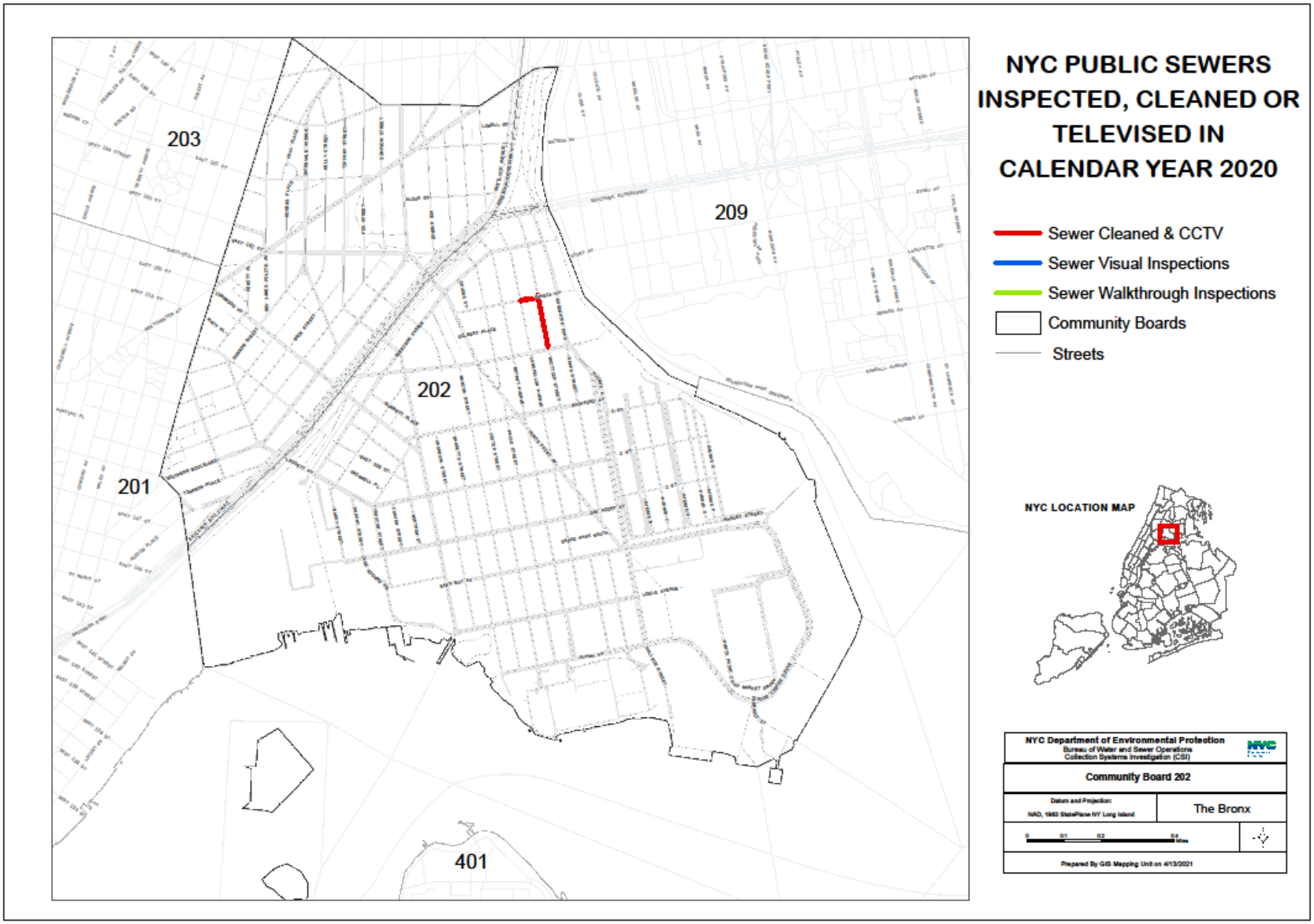
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Community Board 202
The Bronx
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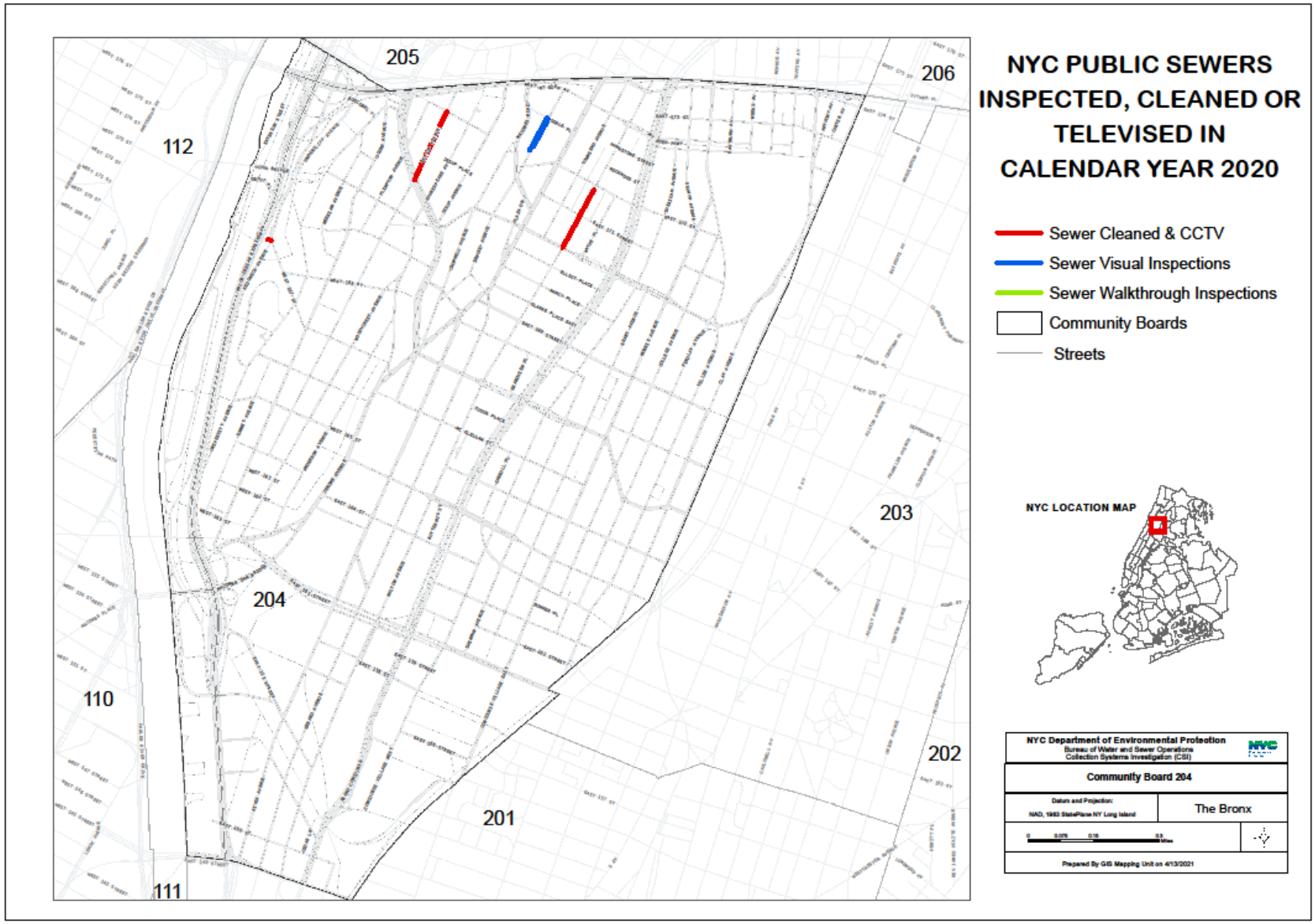
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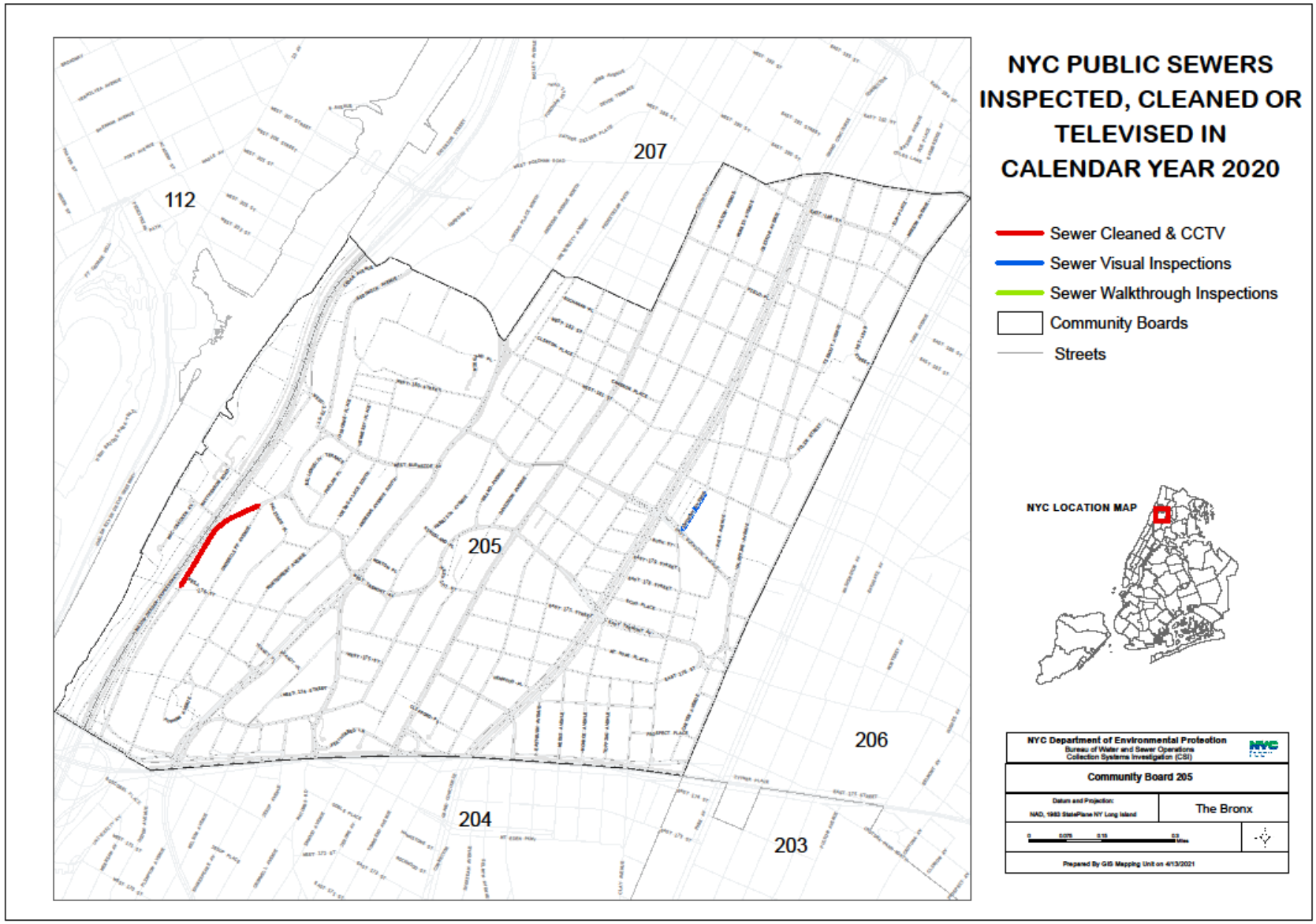
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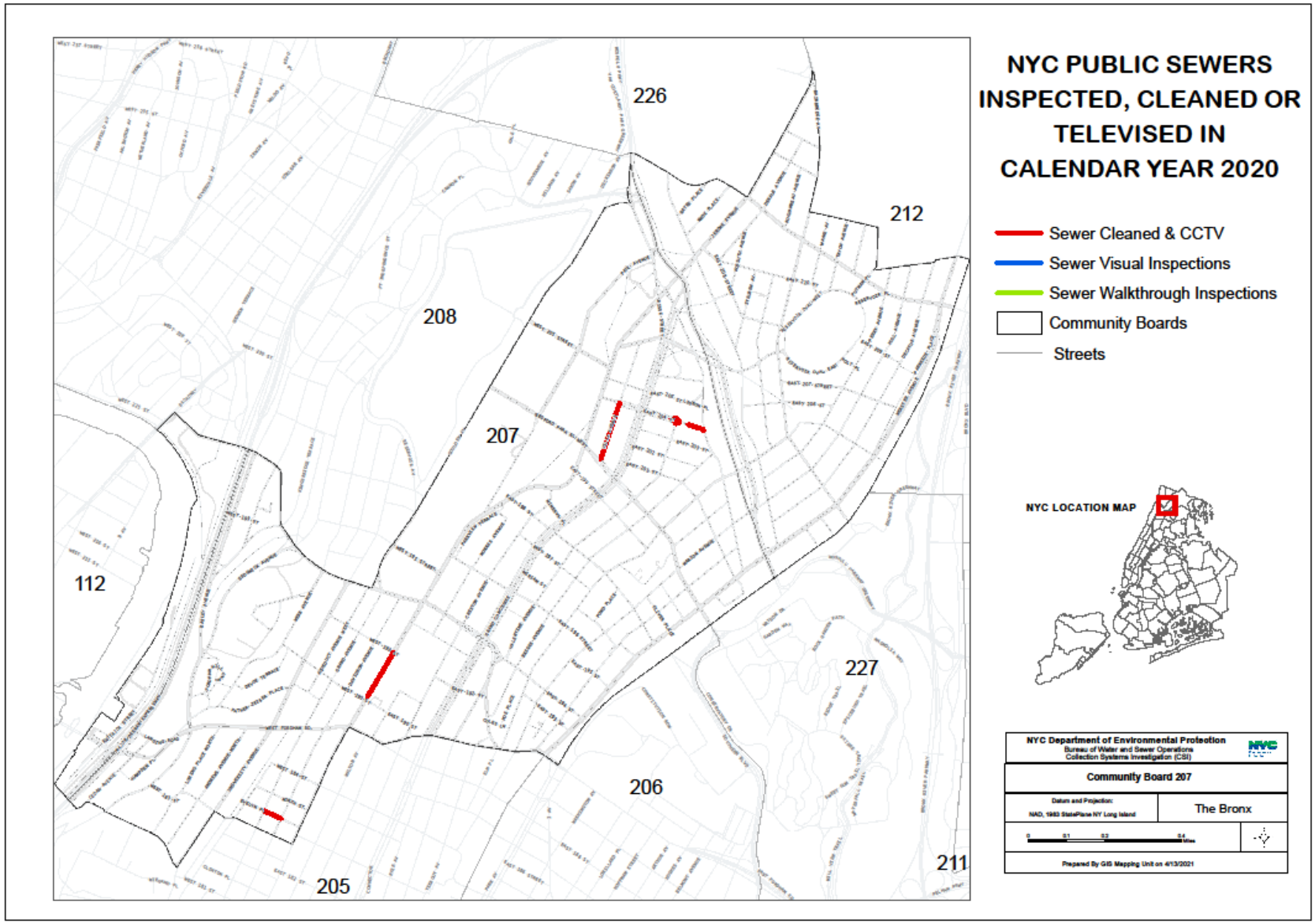
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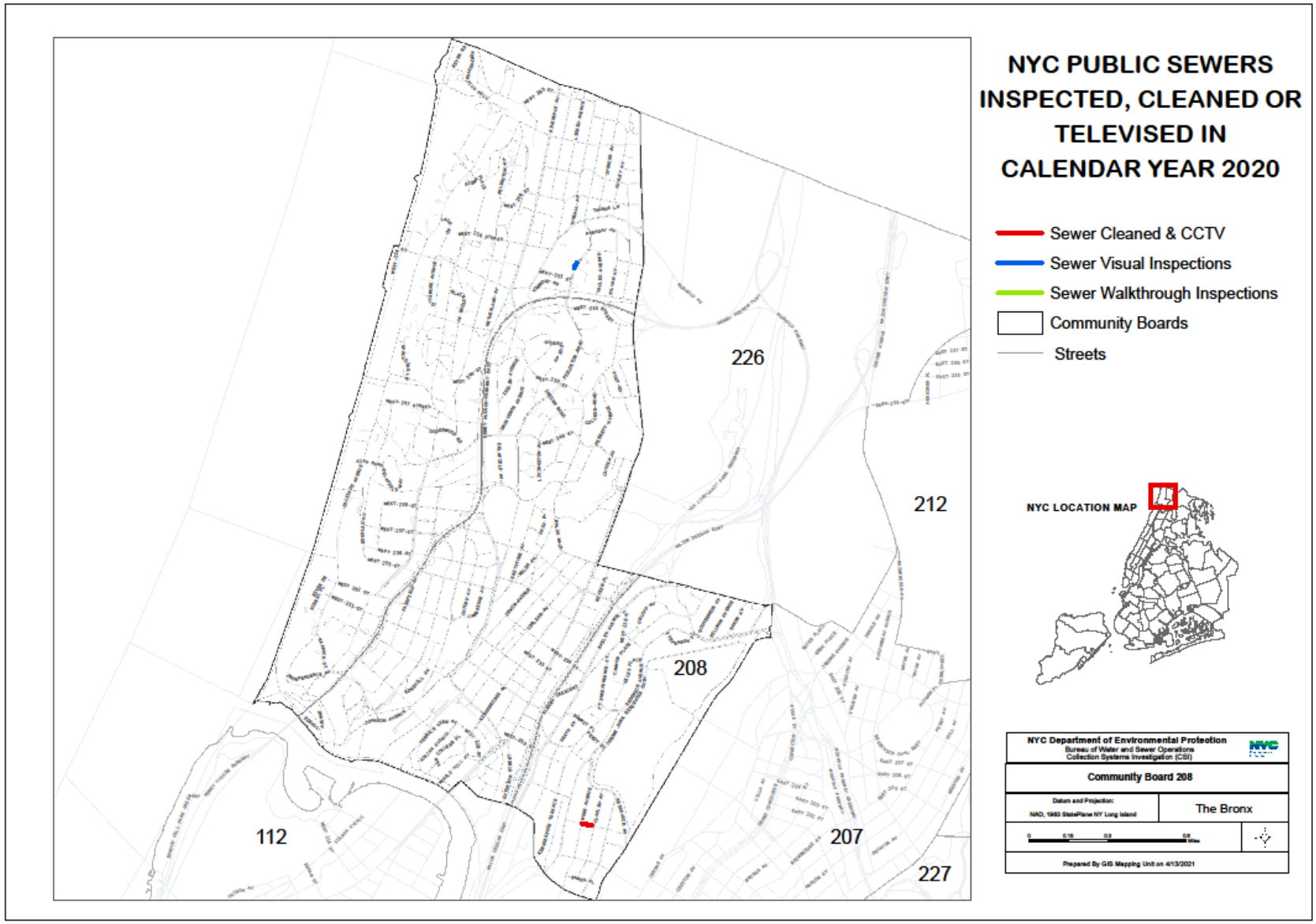
The Bronx
Prepared By GIS Mapping Unit on 4/13/2021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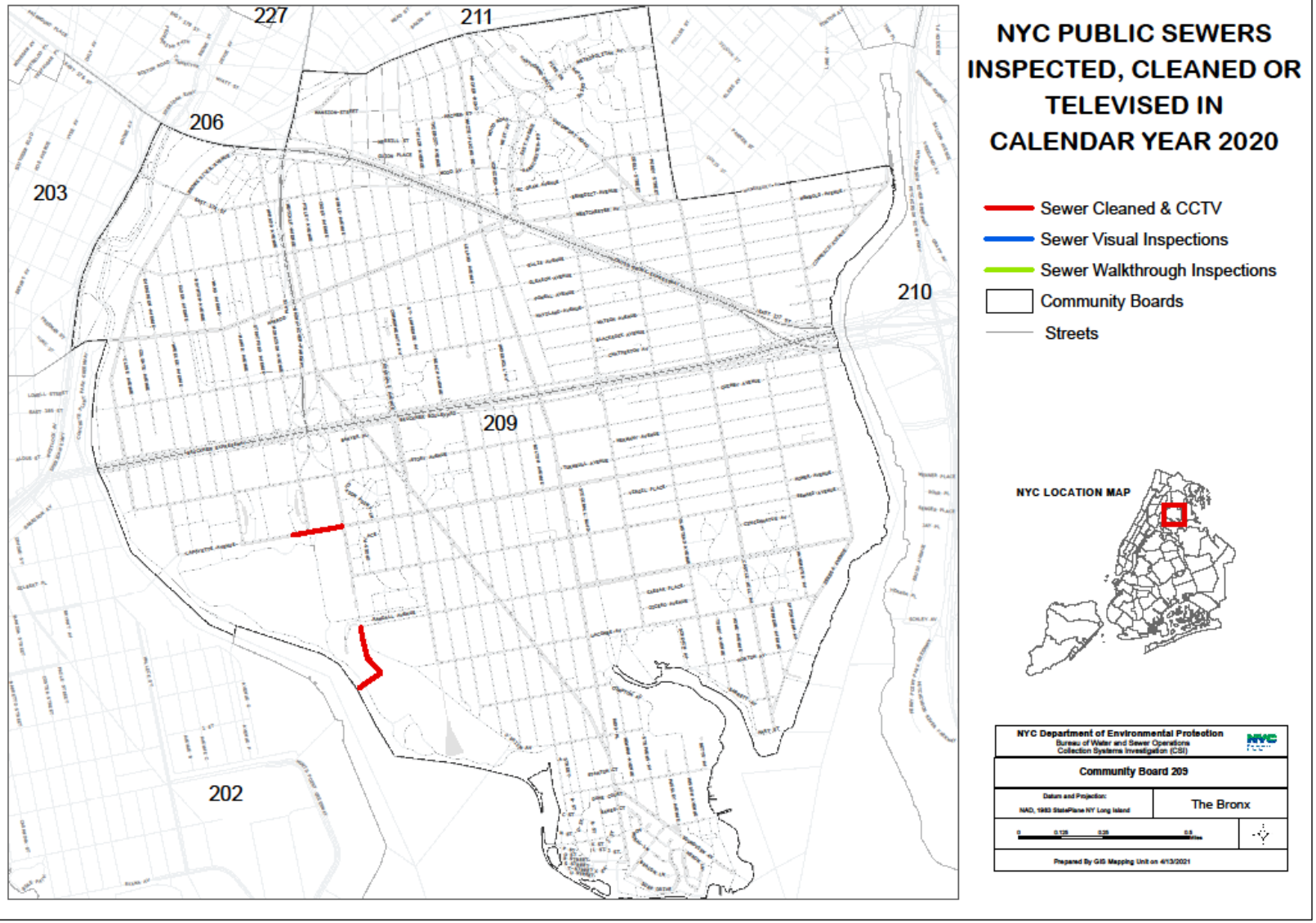
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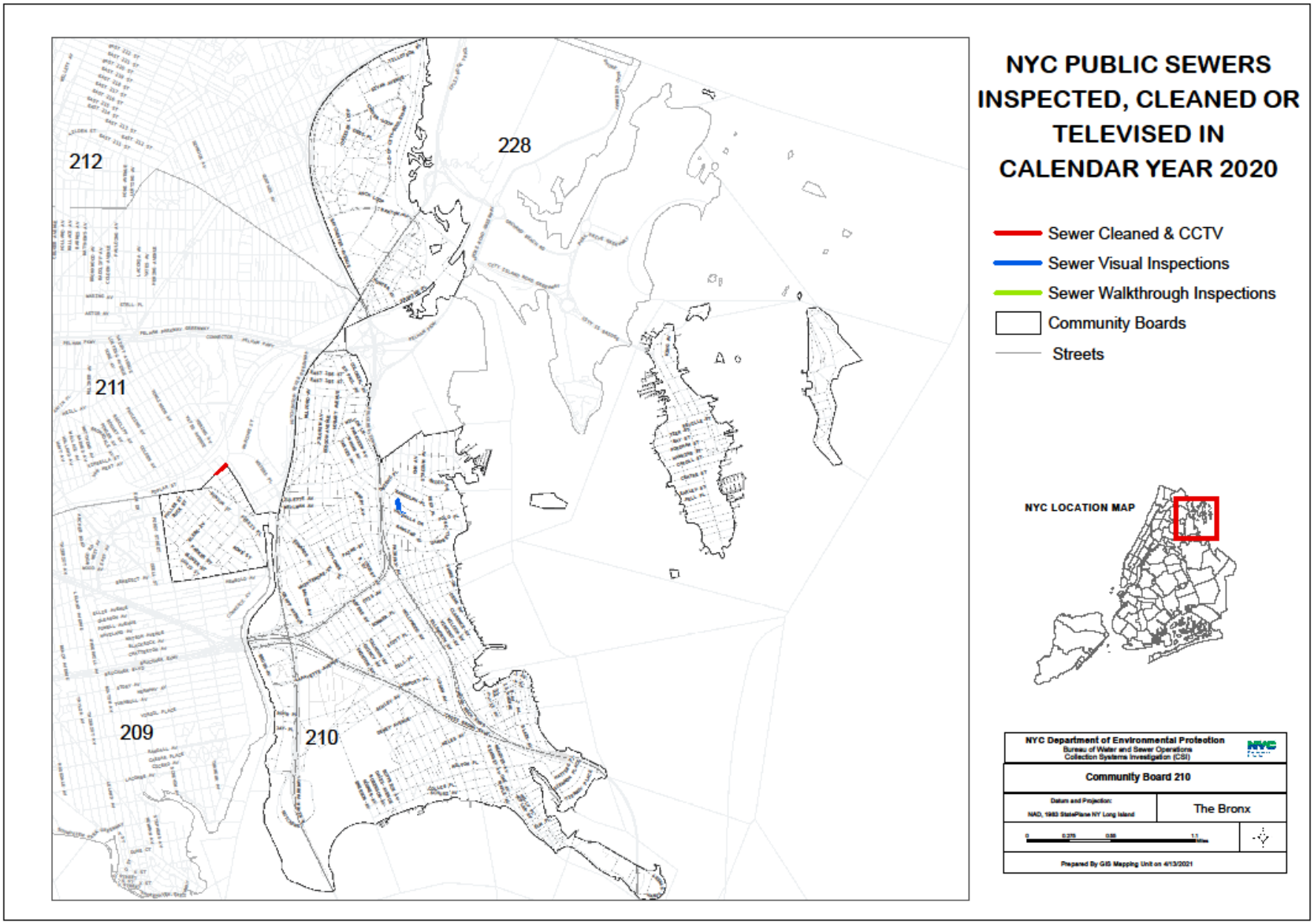
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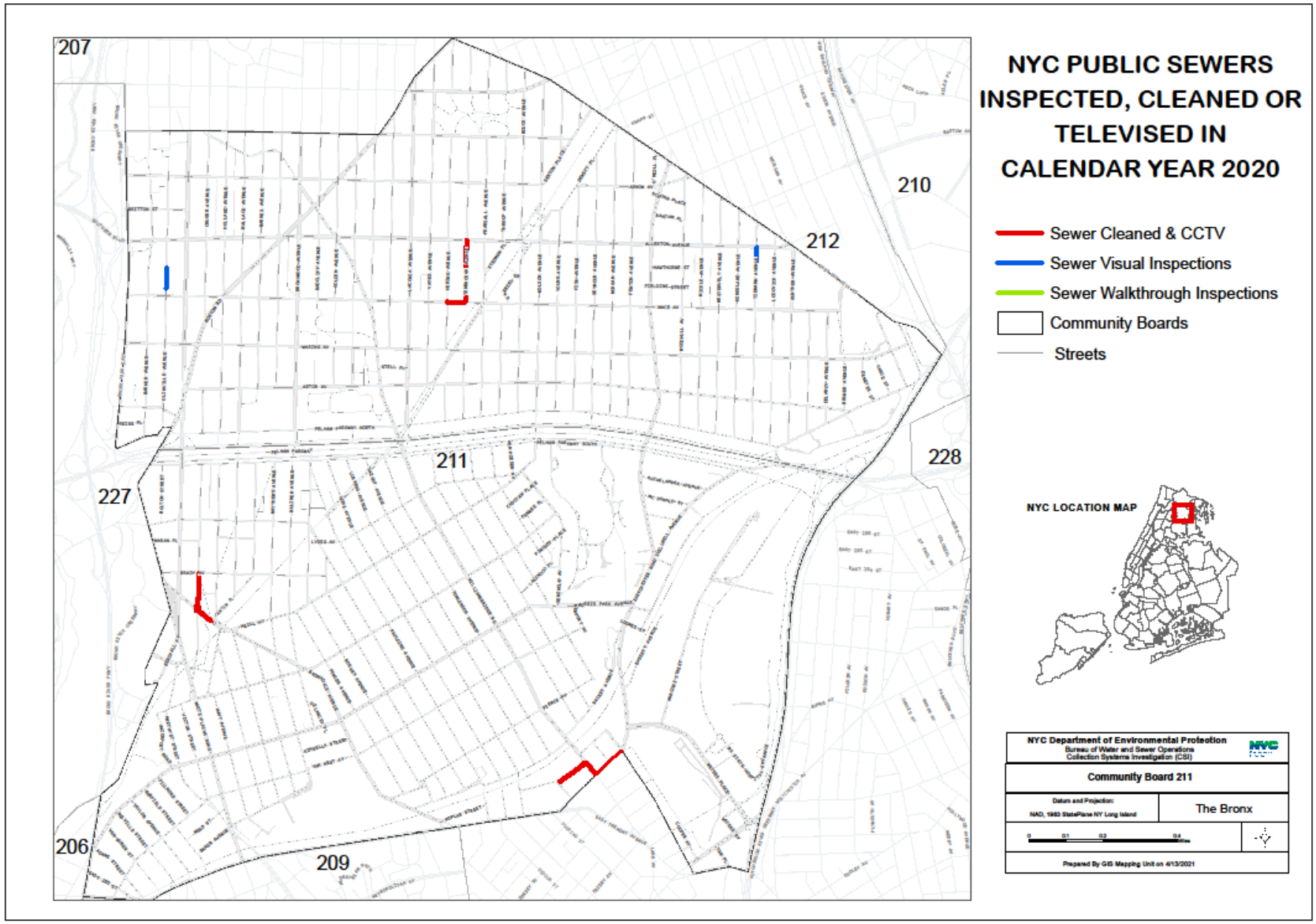
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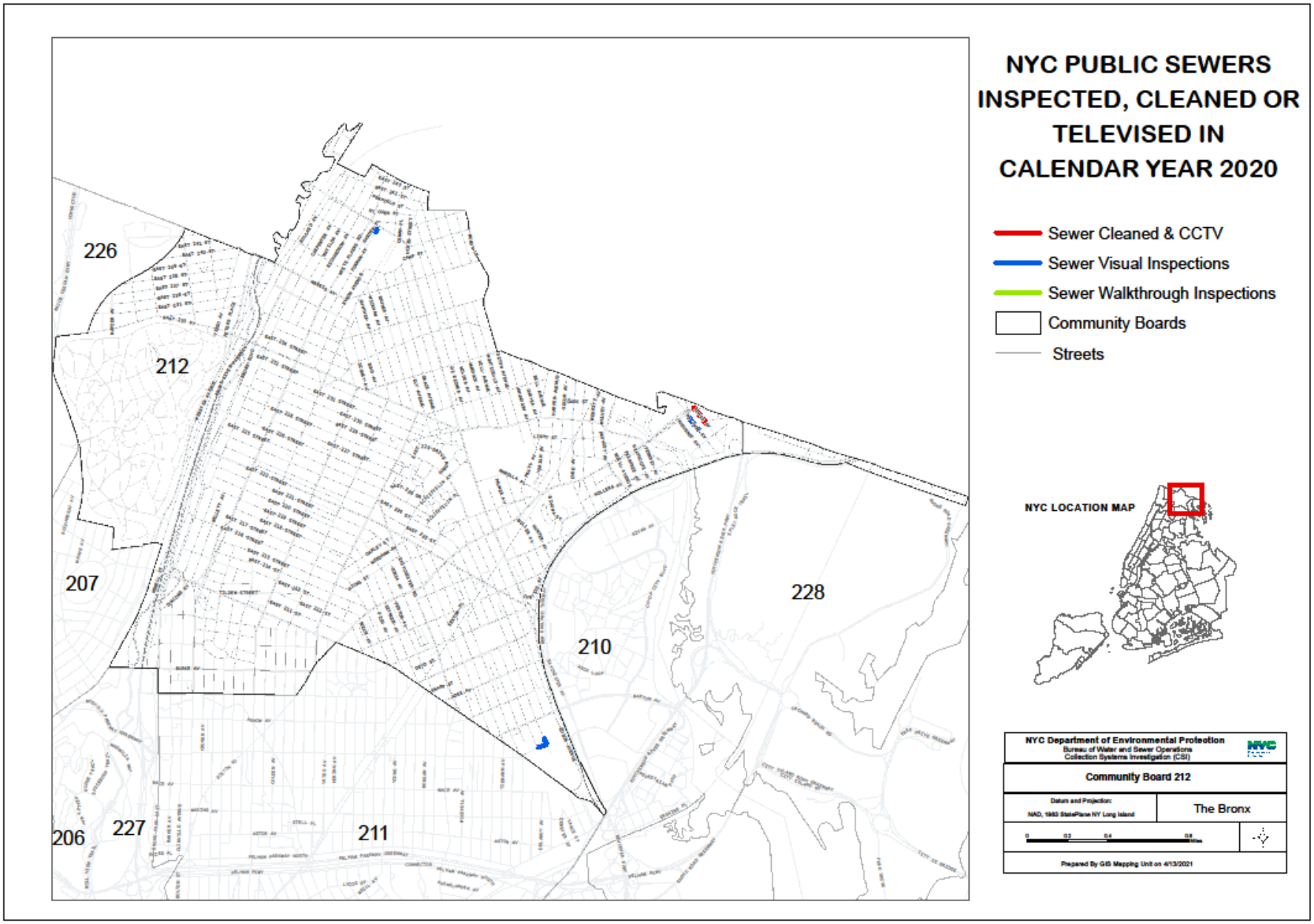
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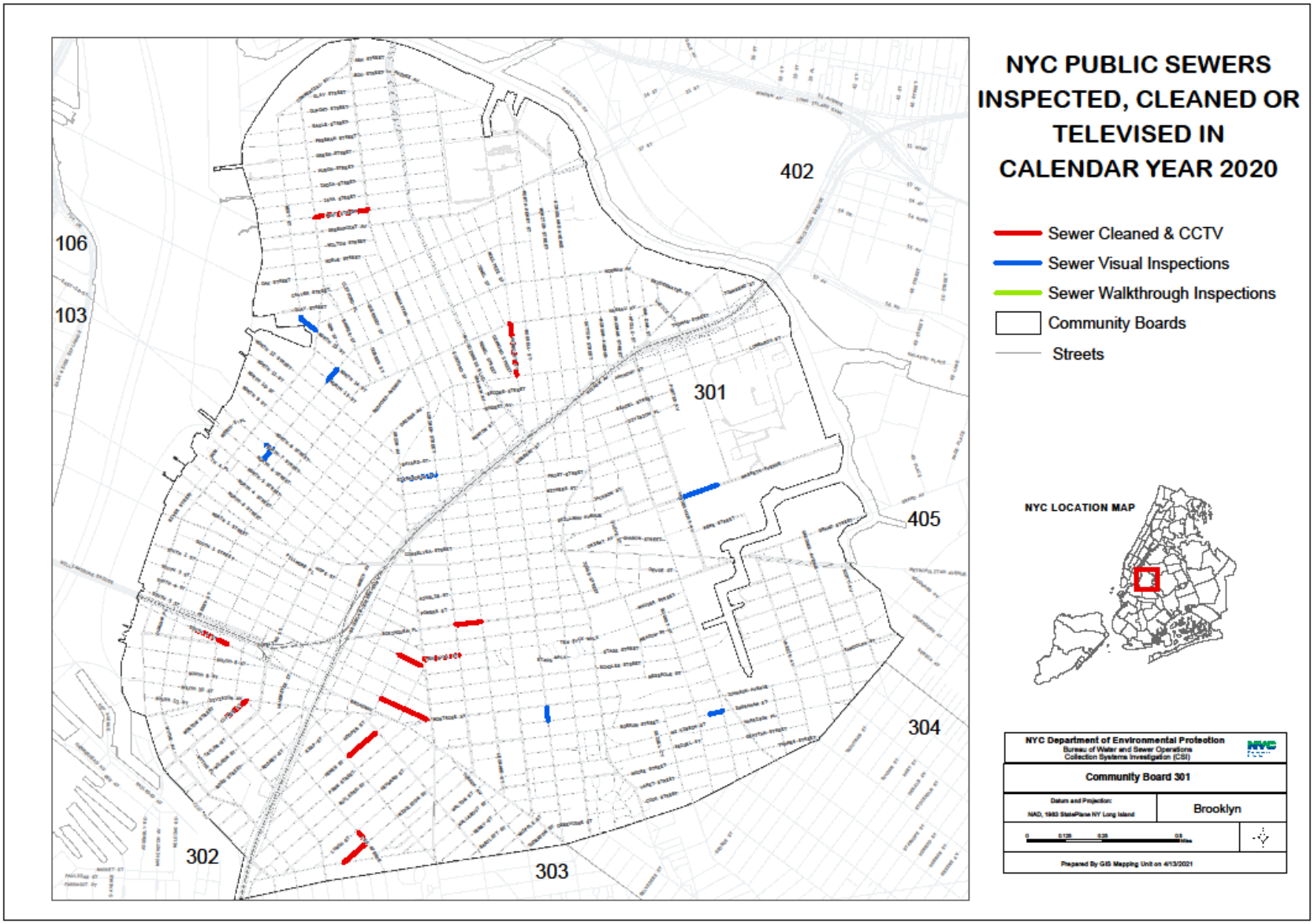
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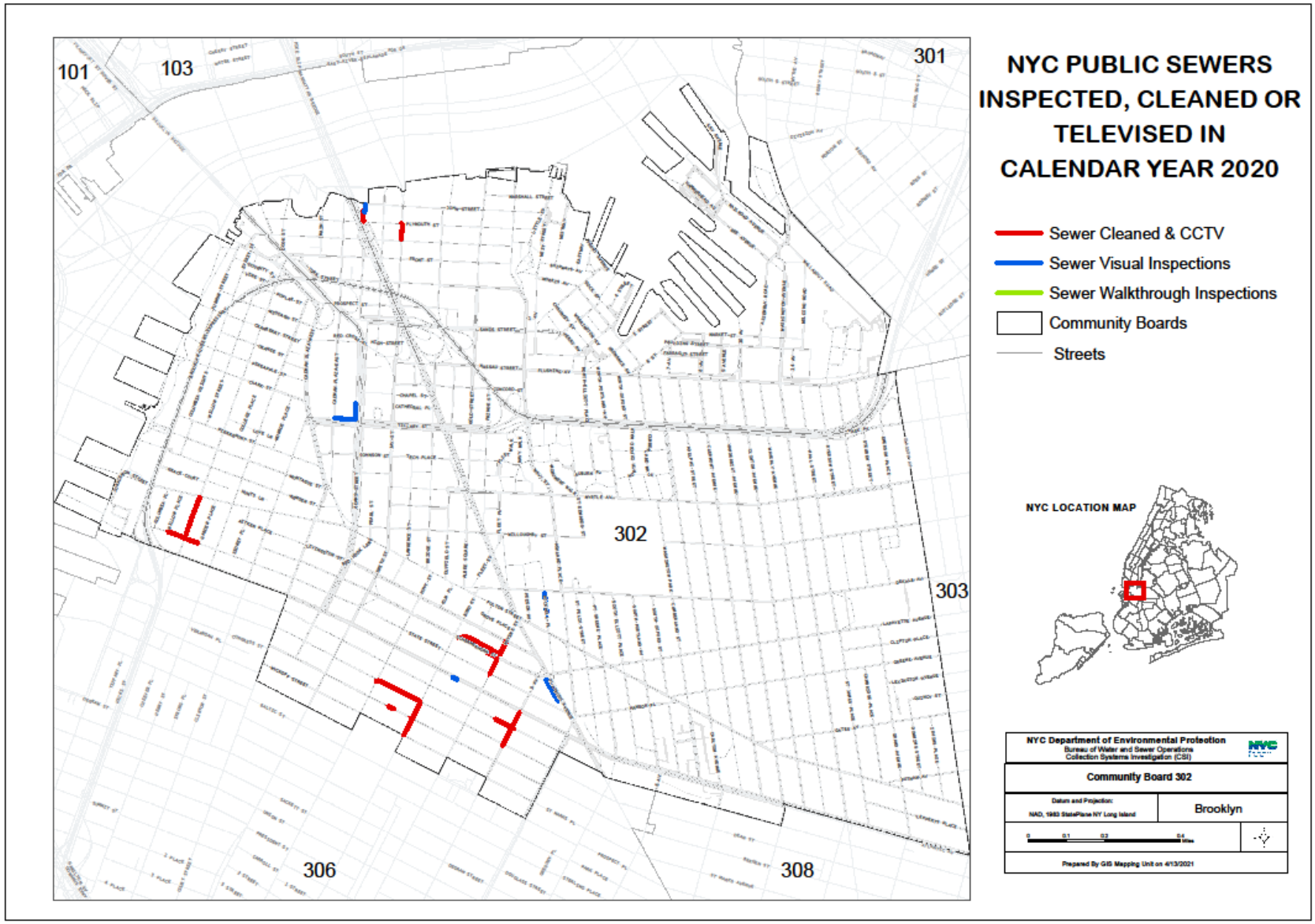
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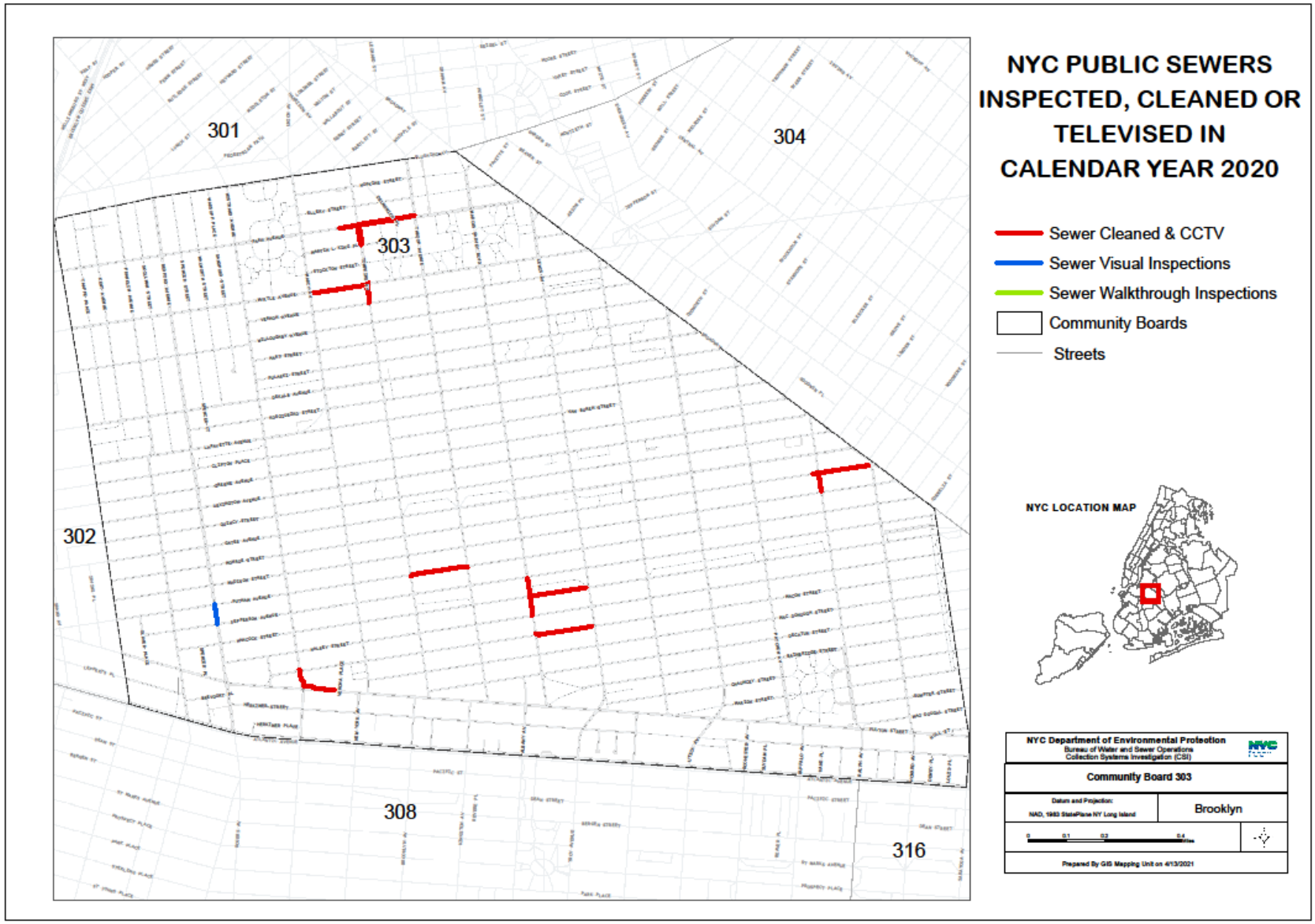
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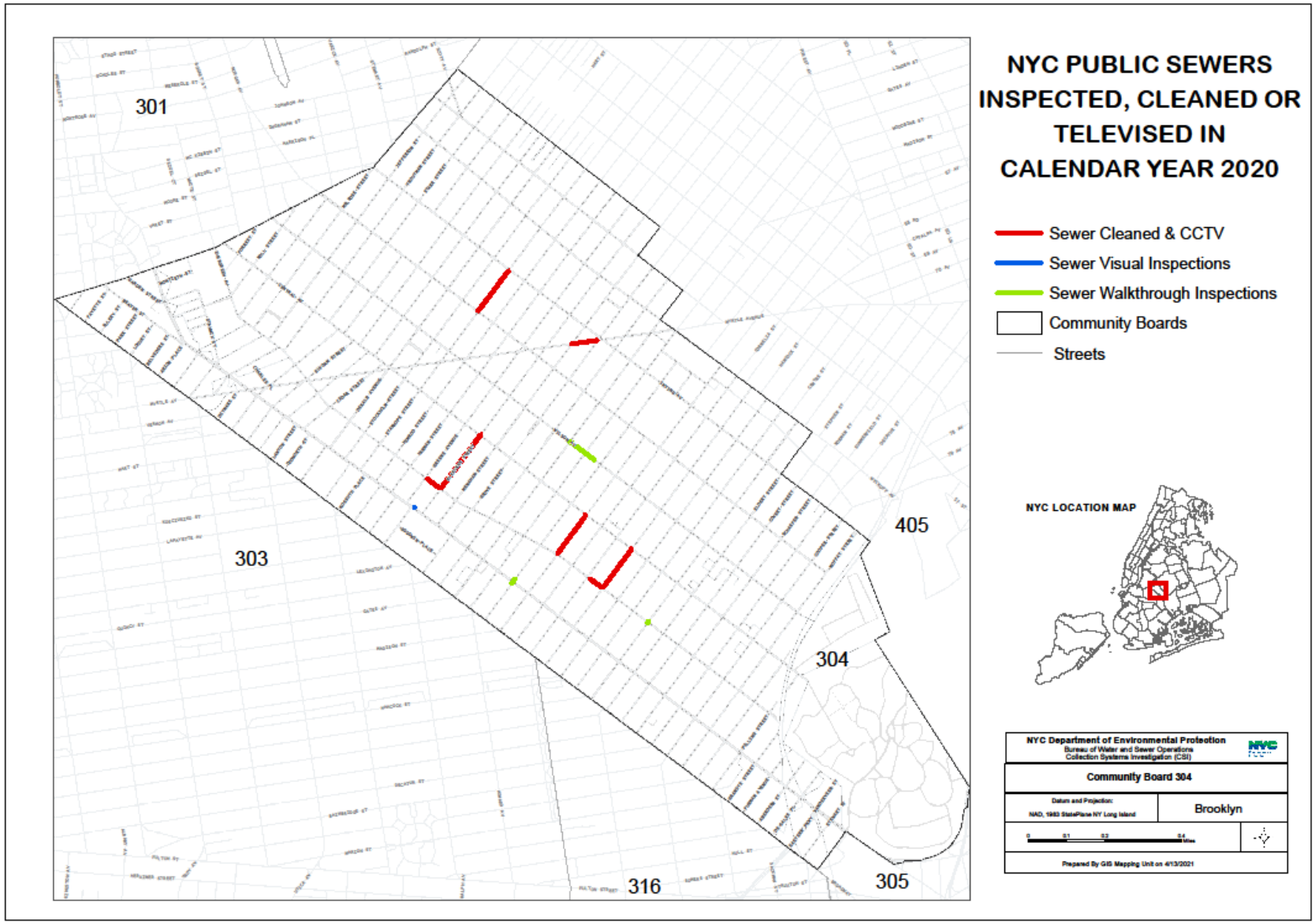
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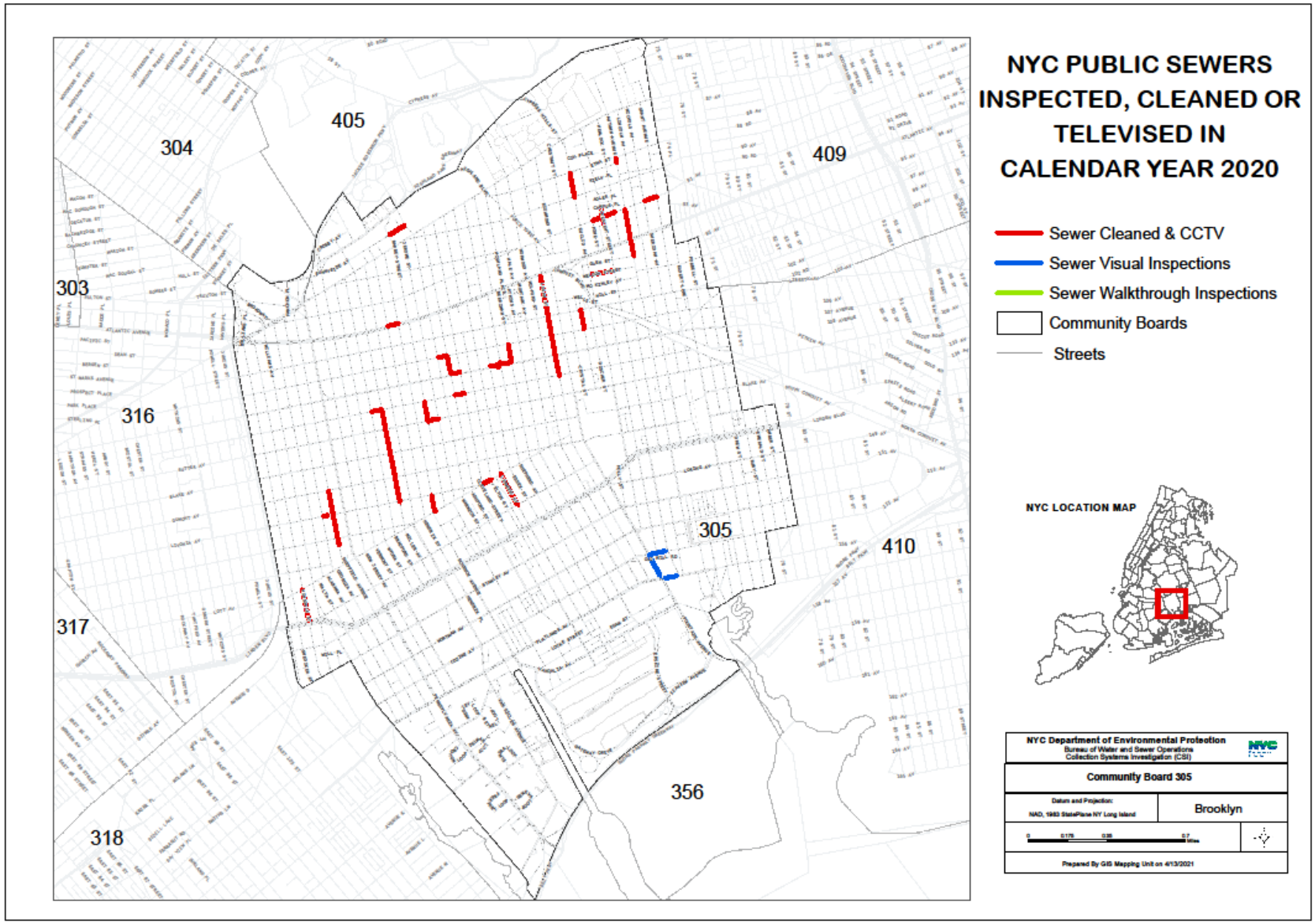
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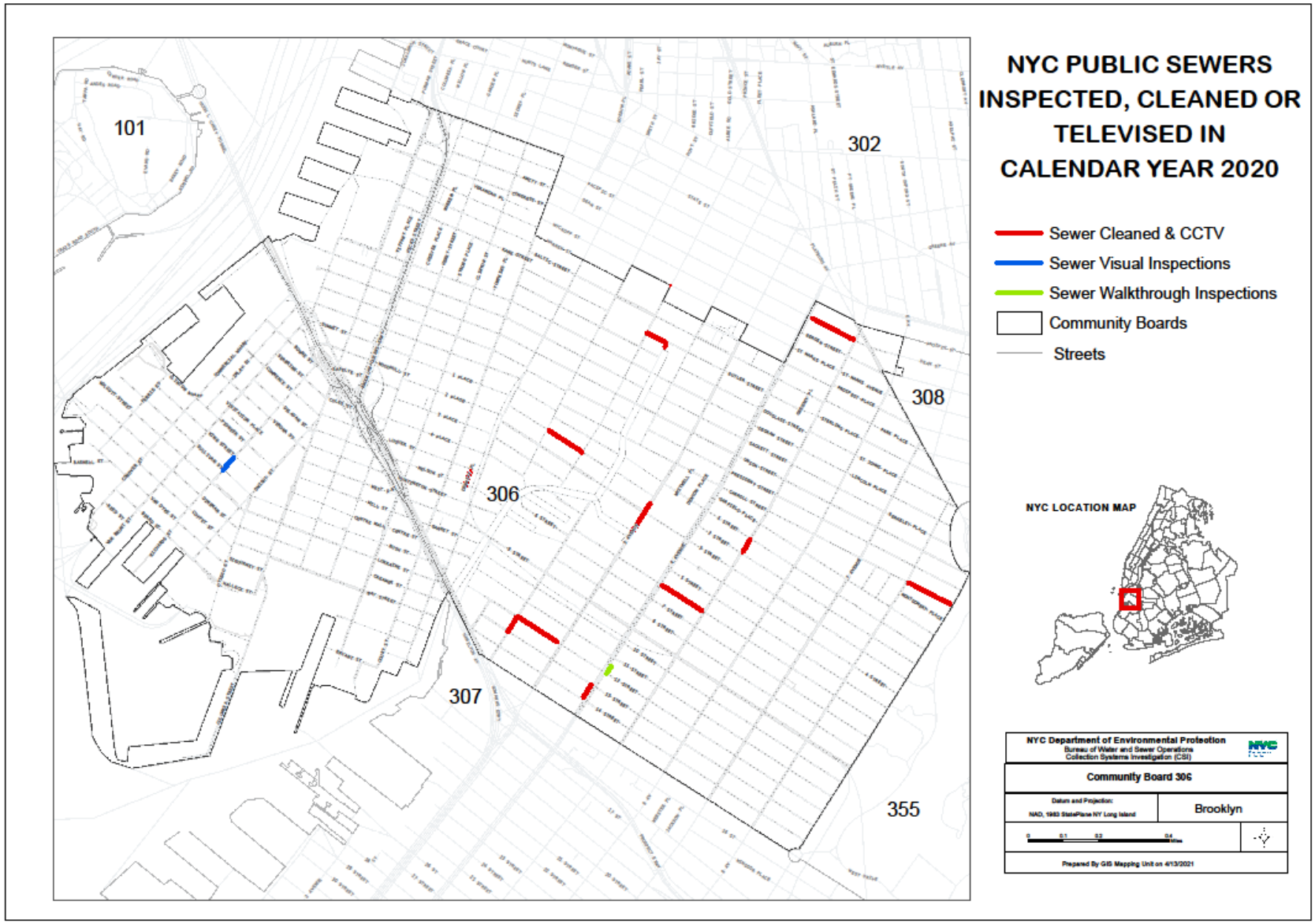
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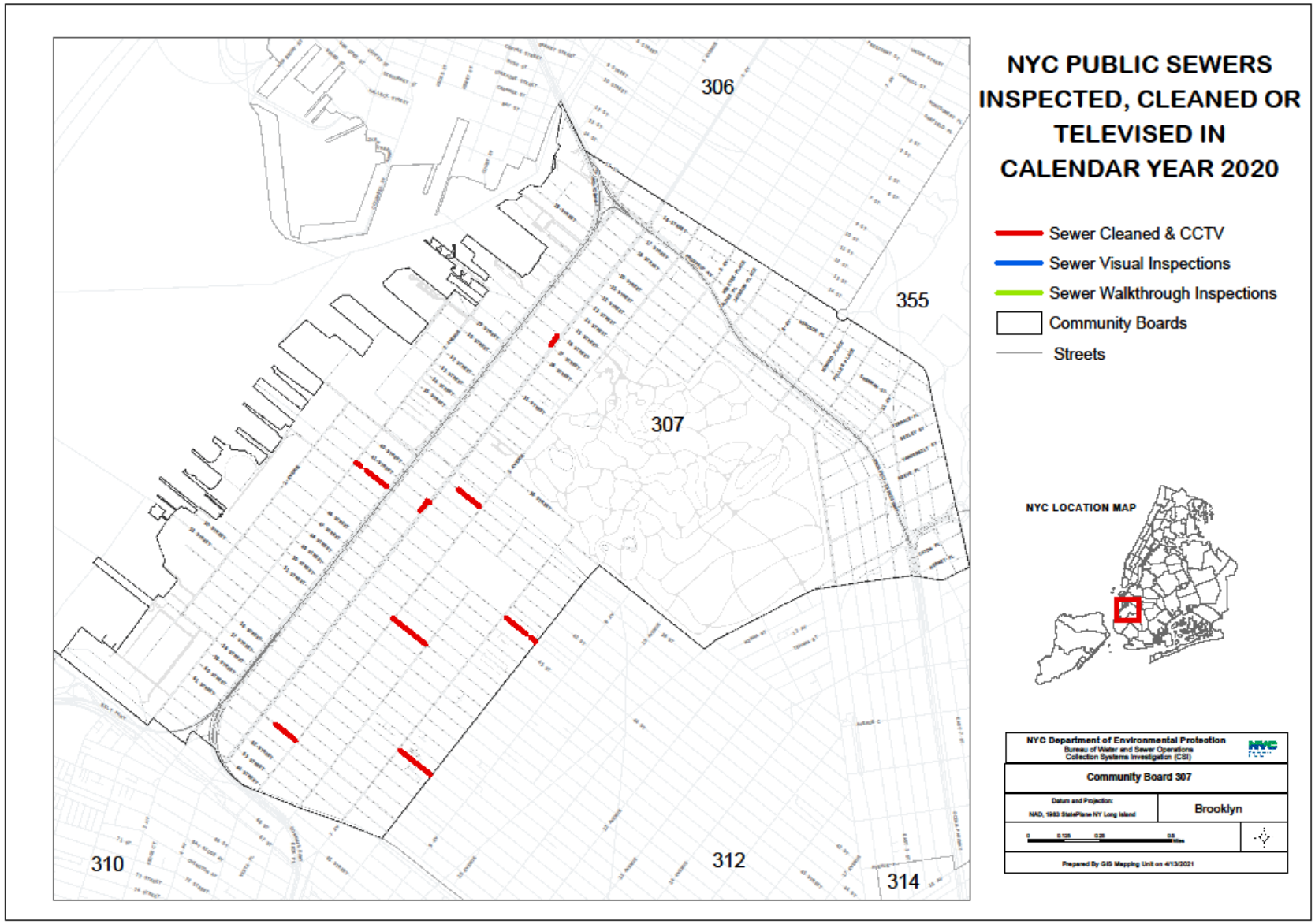
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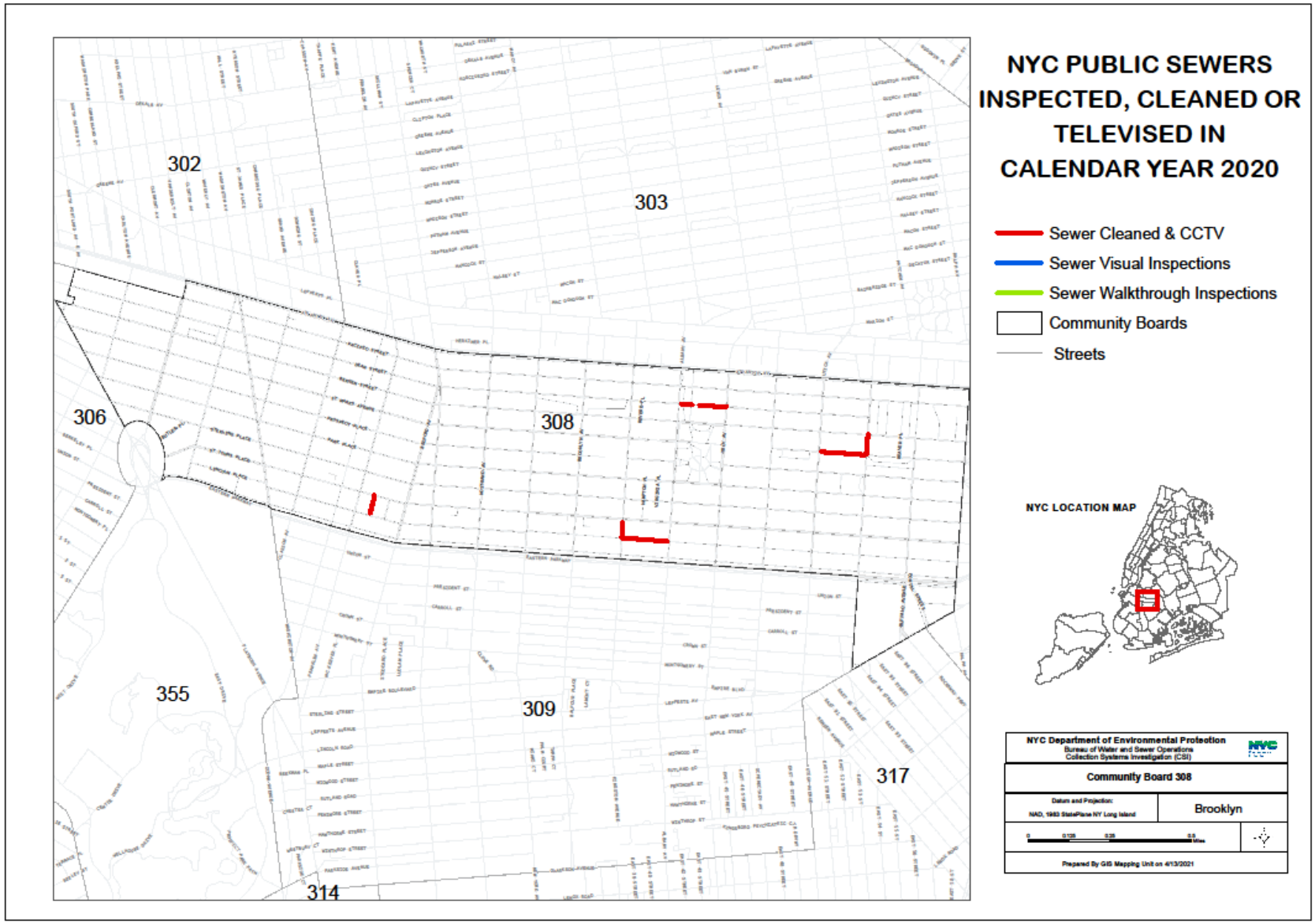
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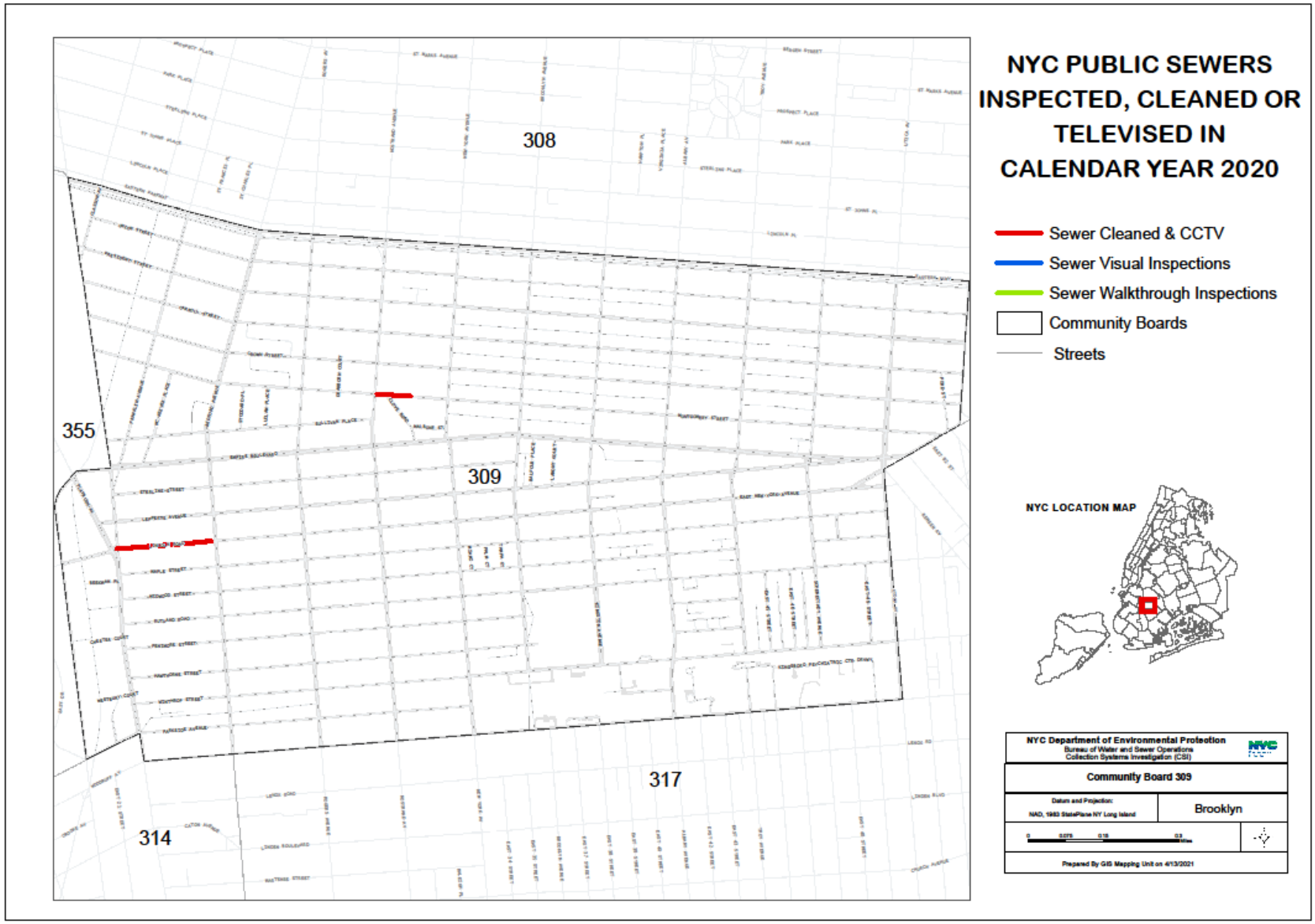
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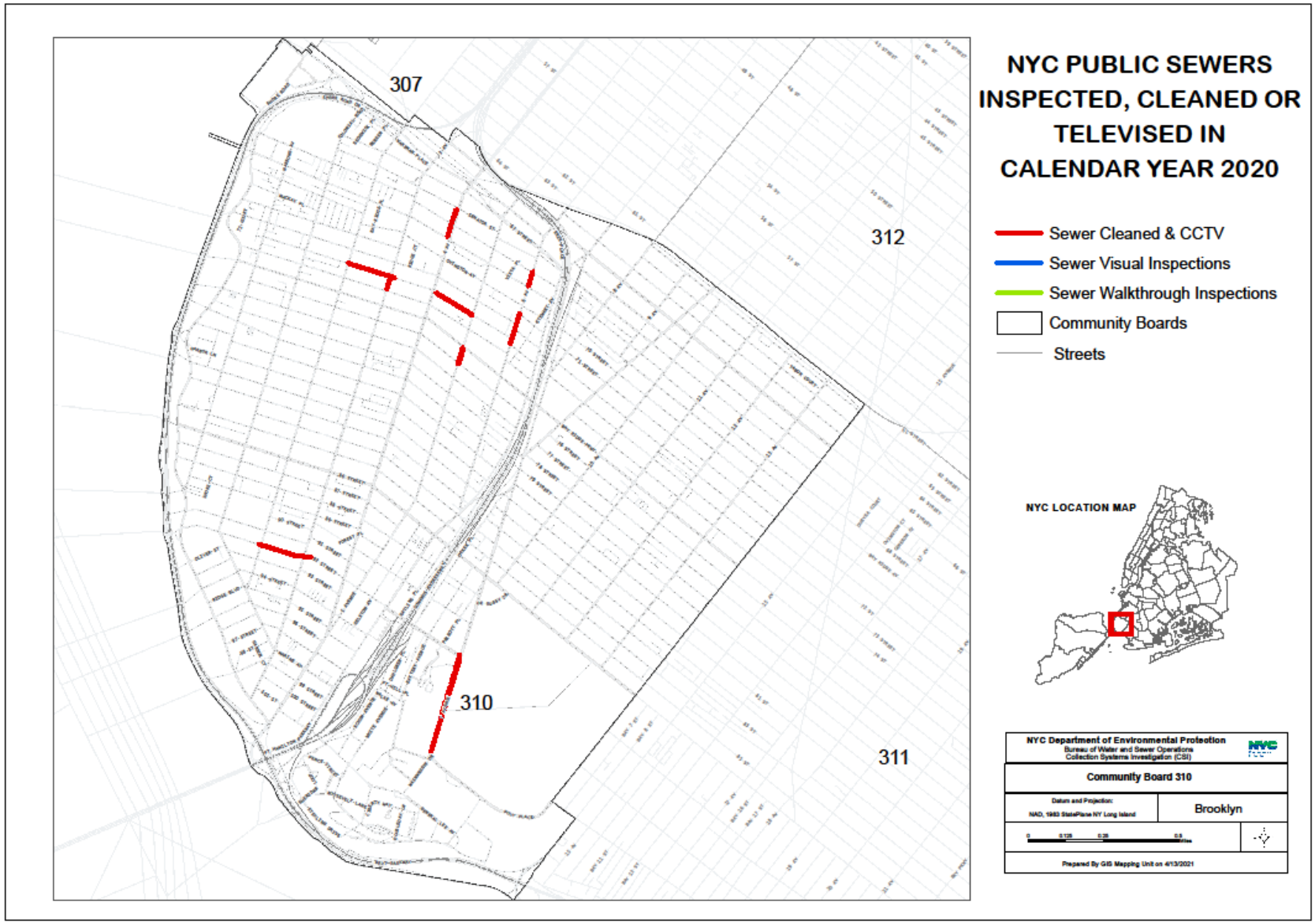
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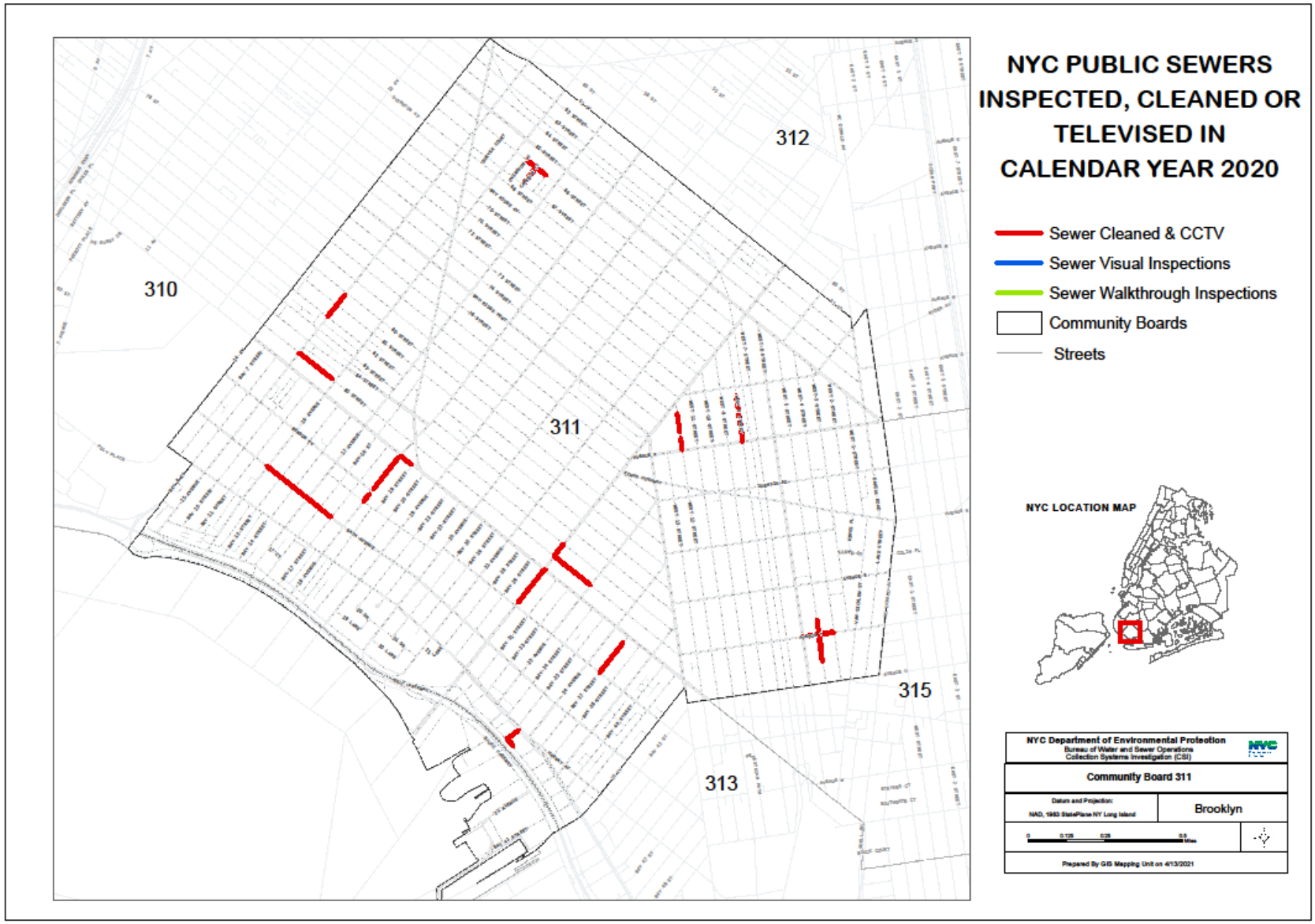
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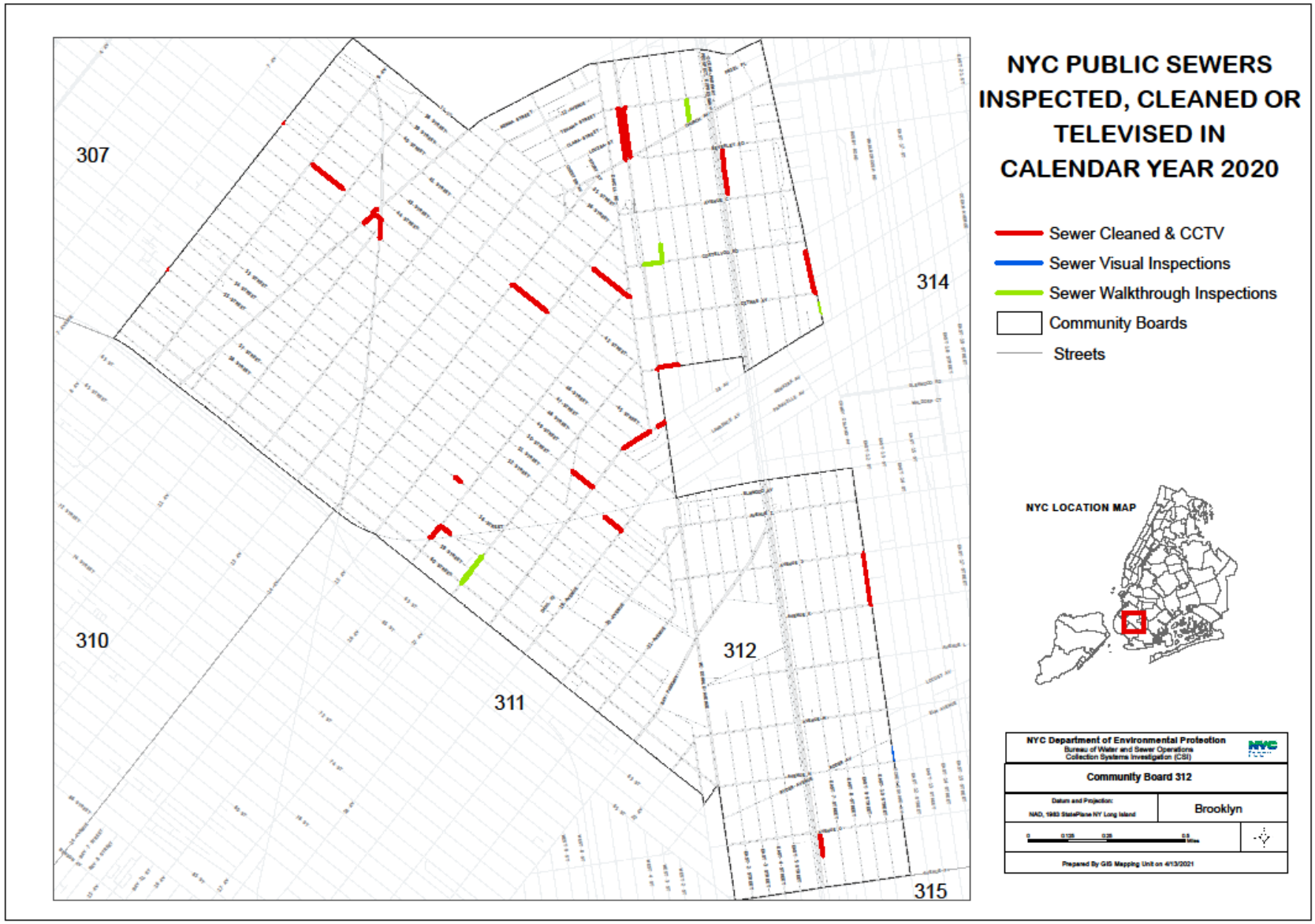
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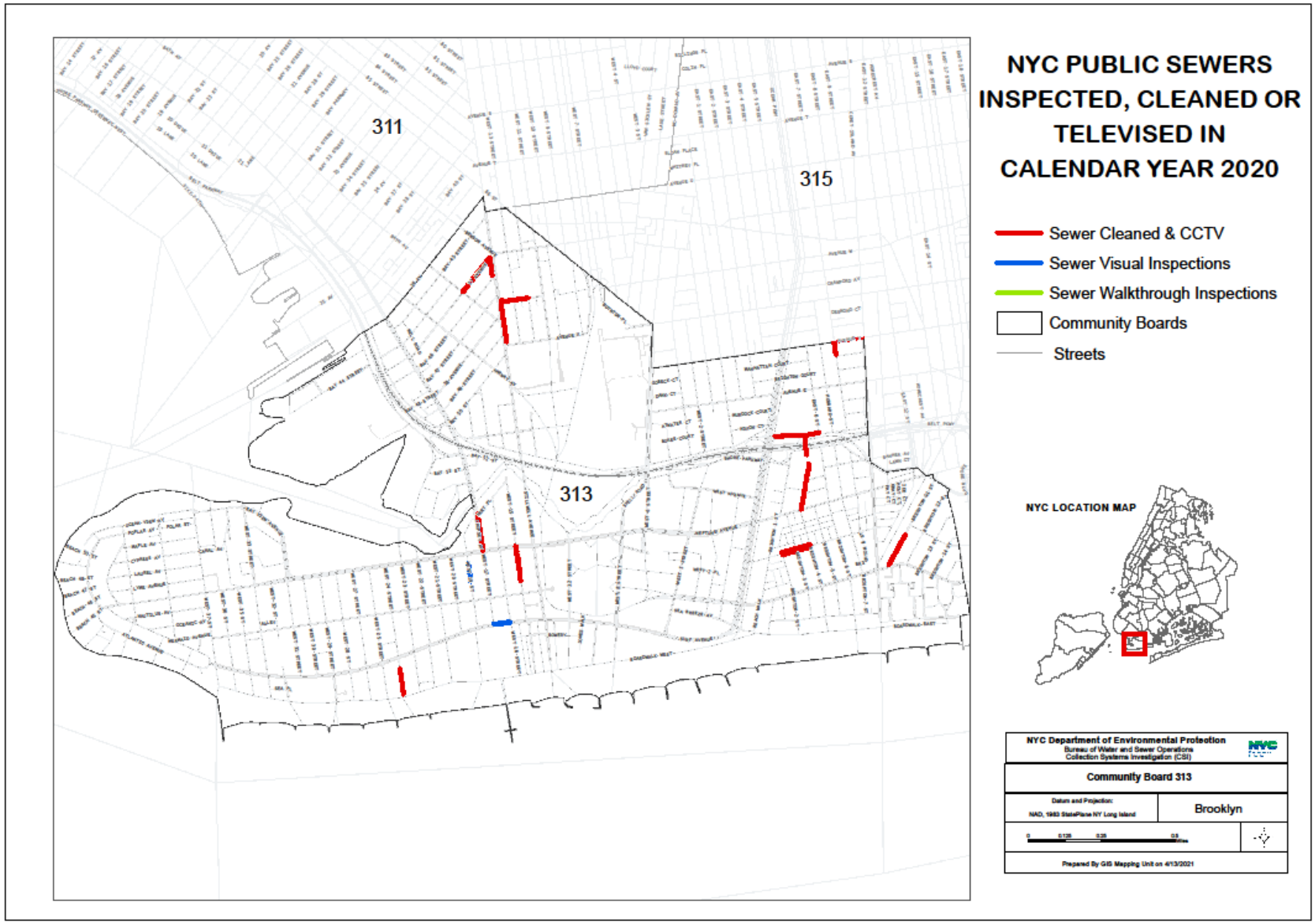
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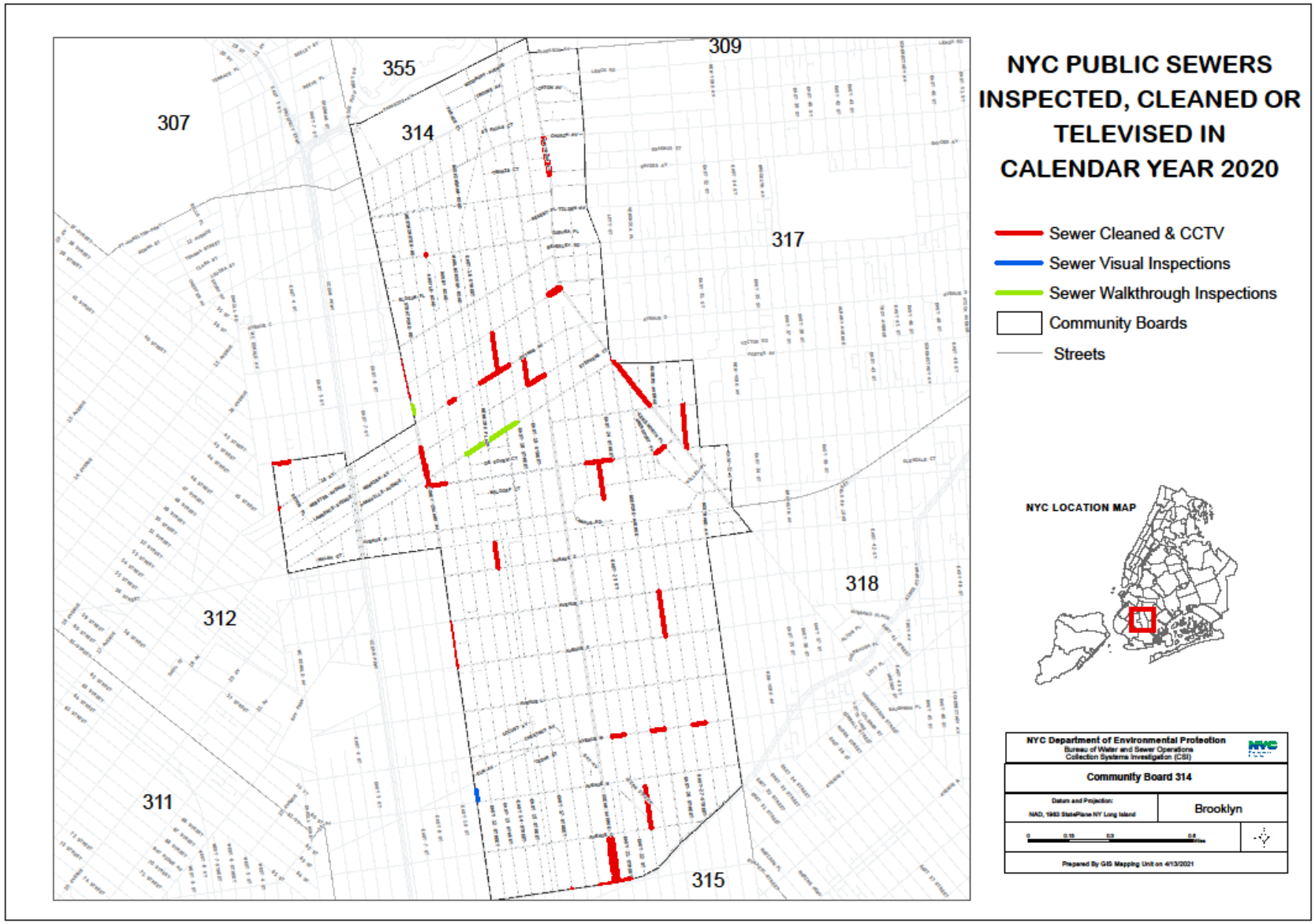
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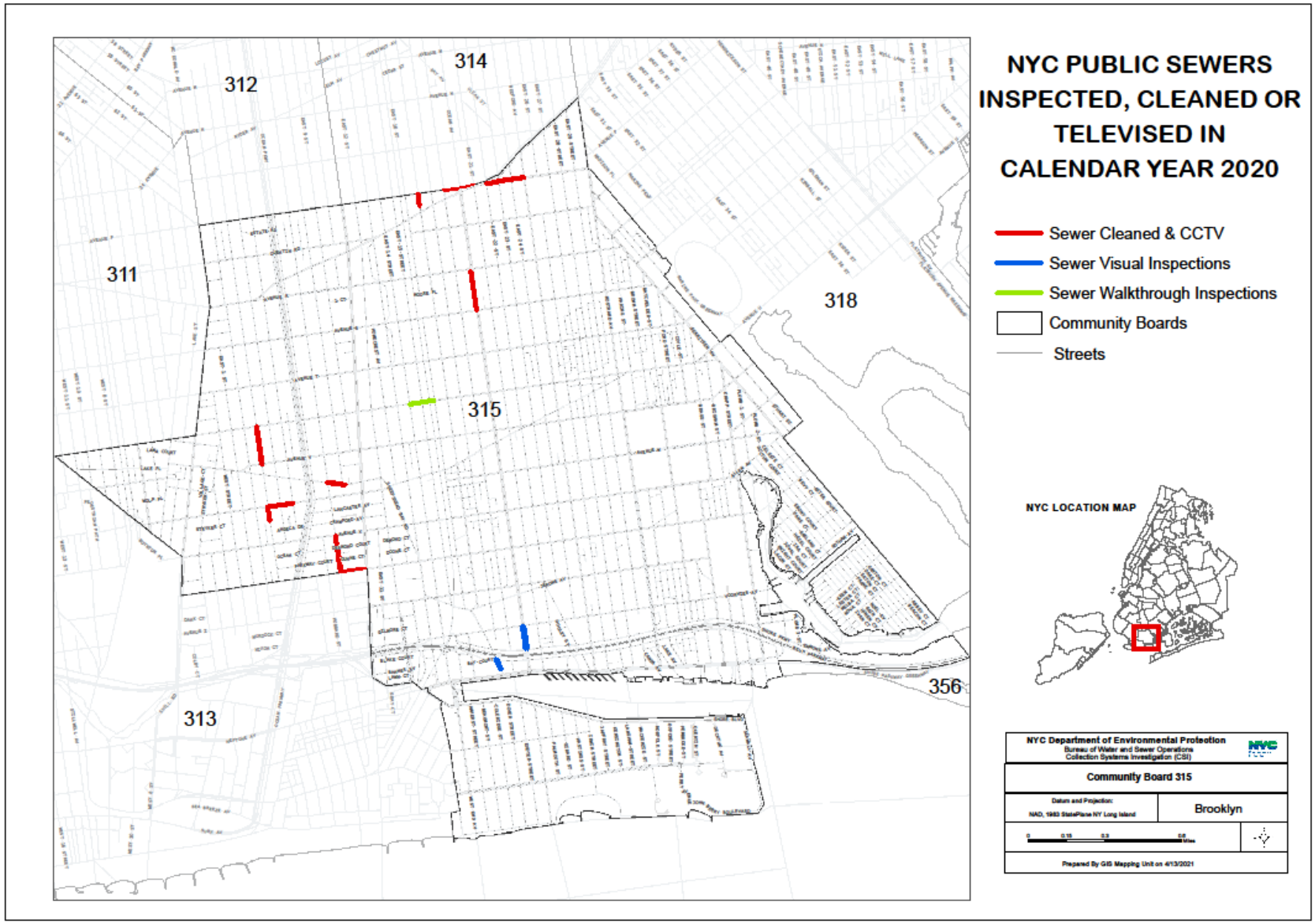
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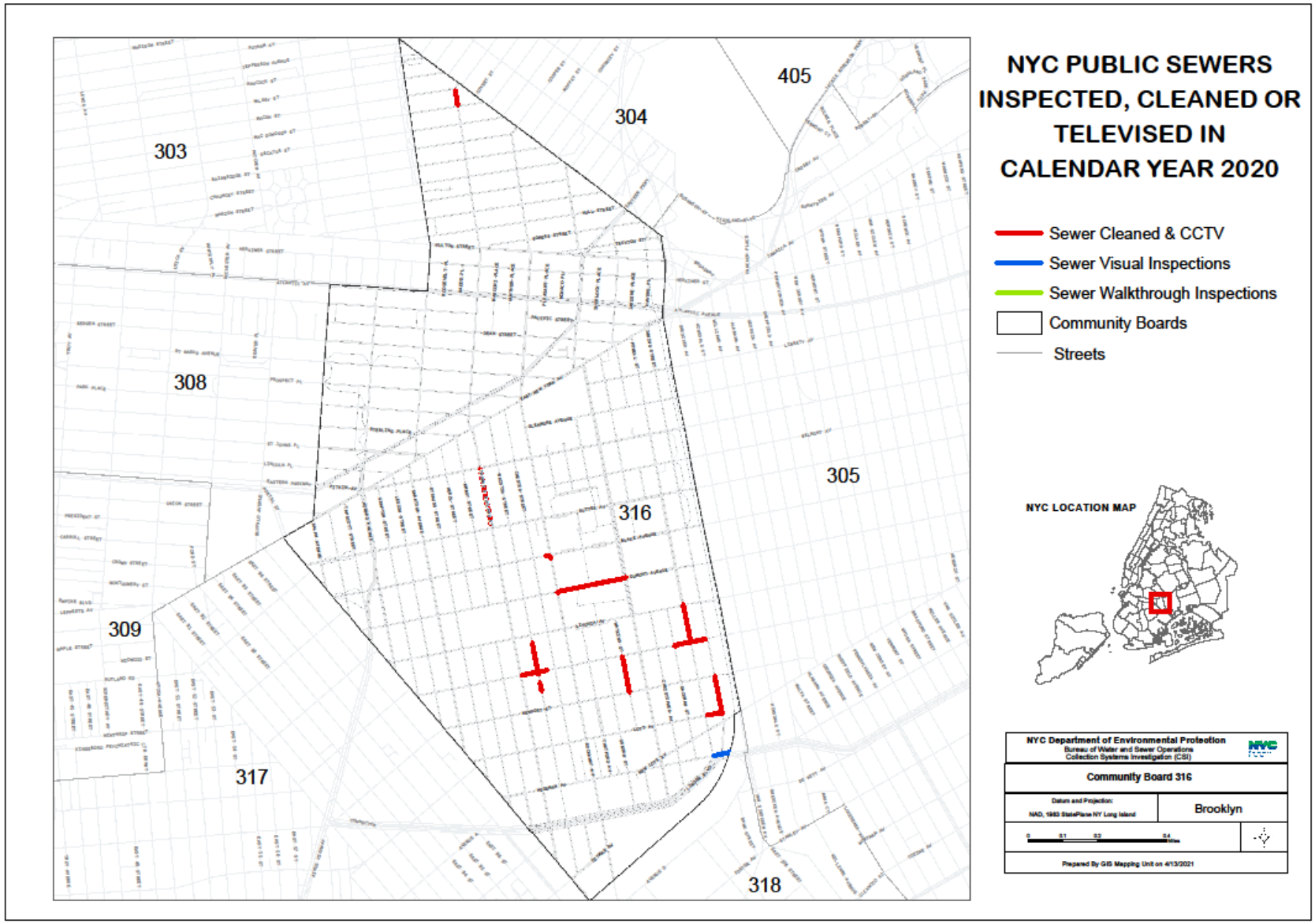
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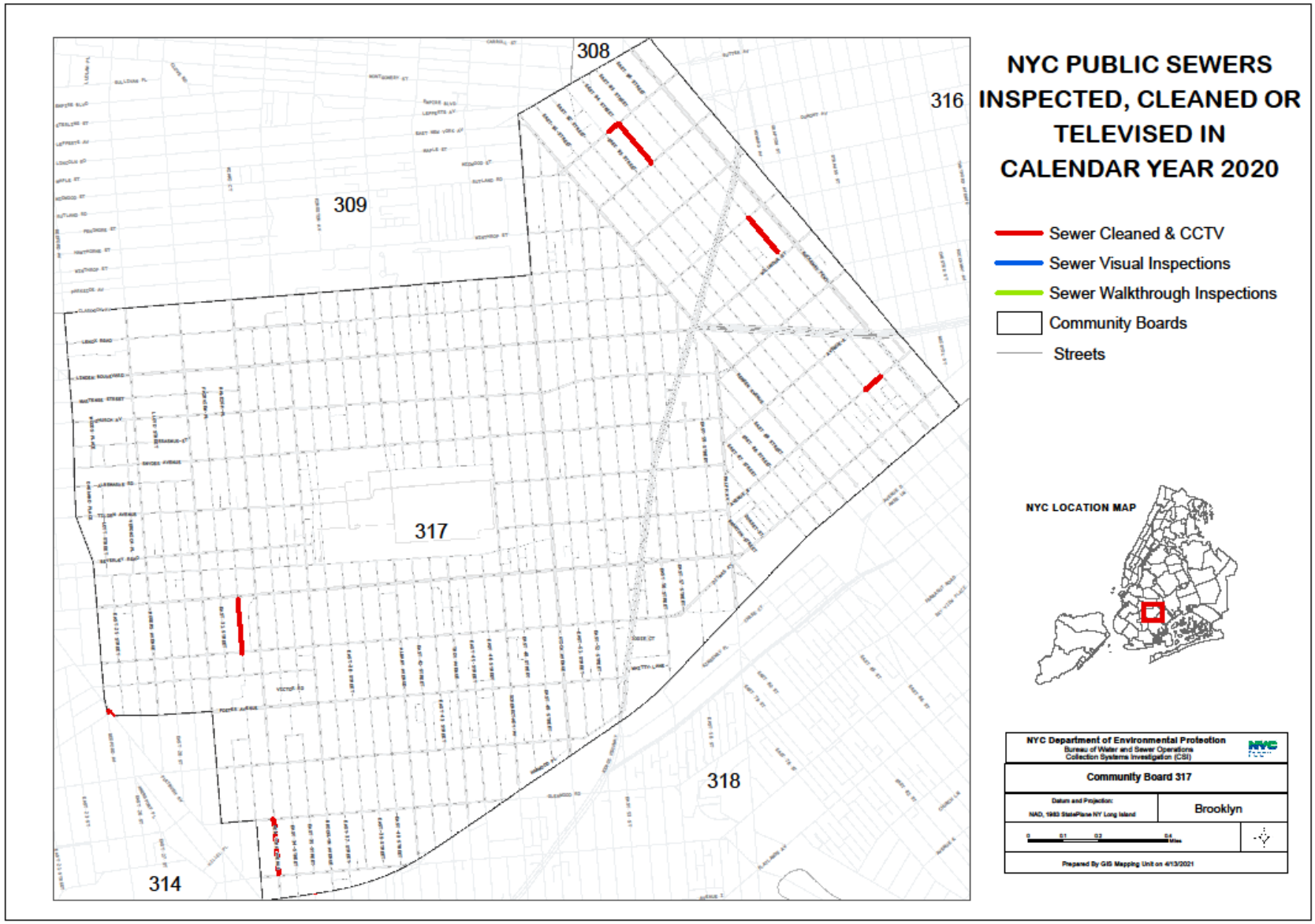
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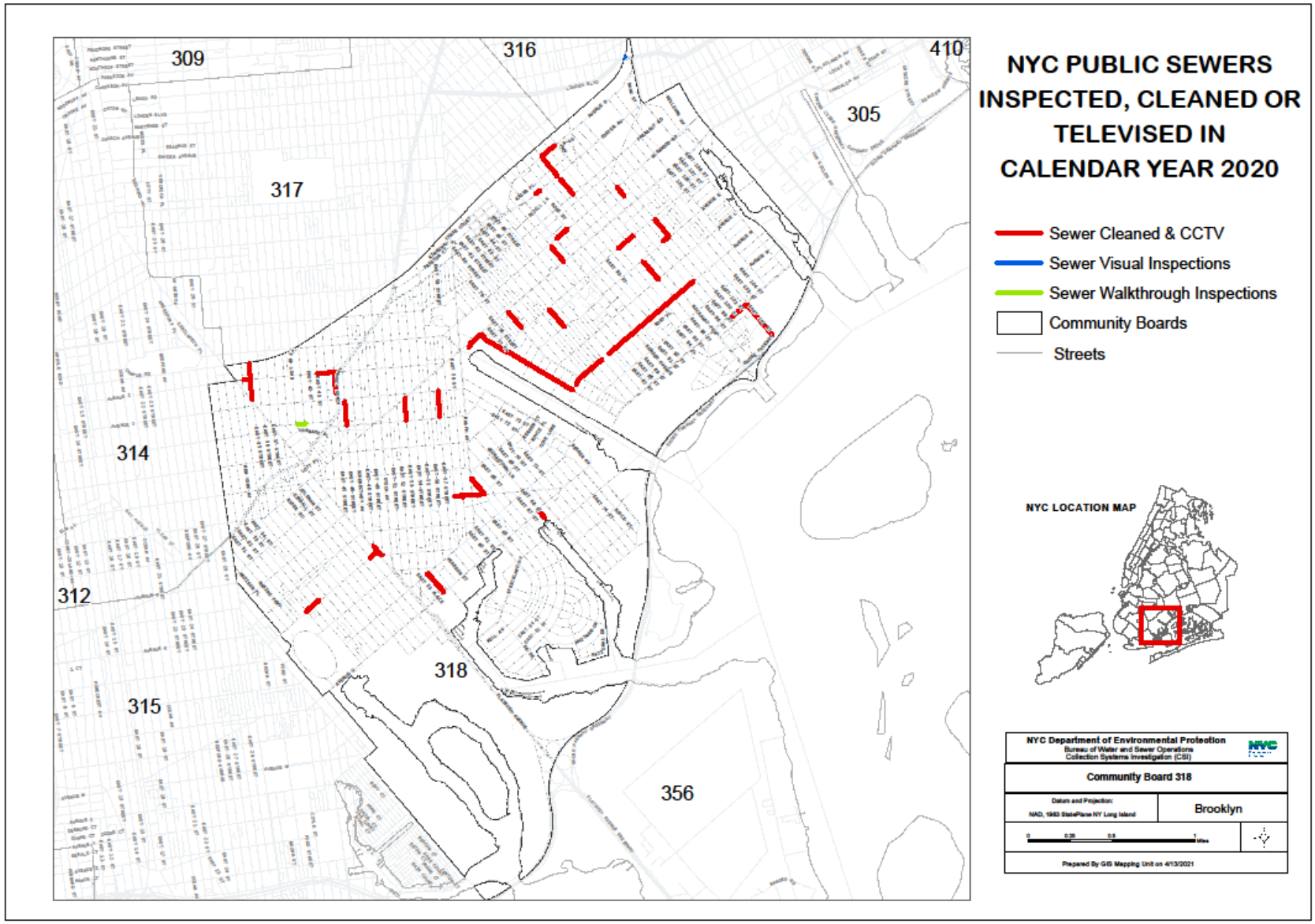
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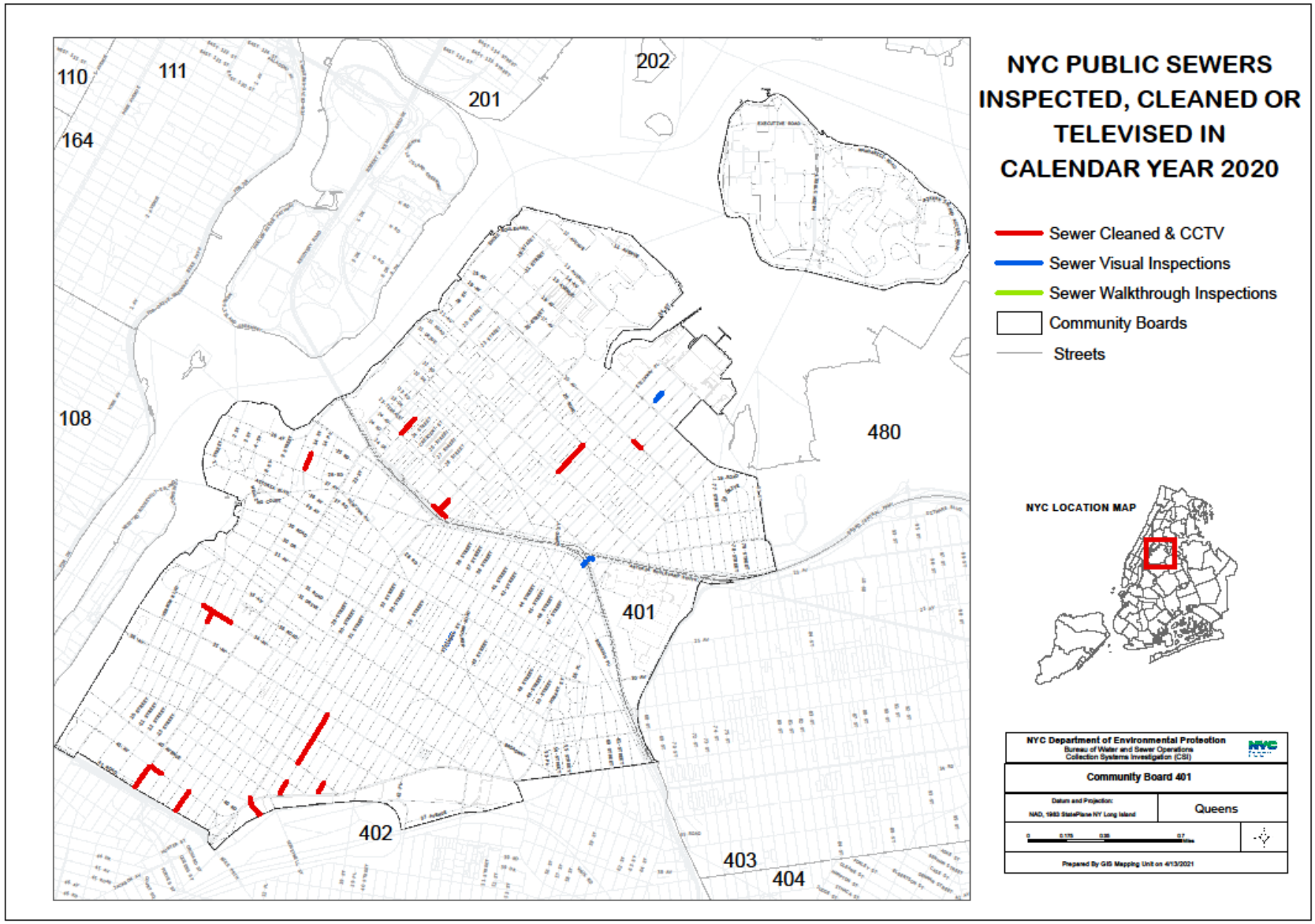
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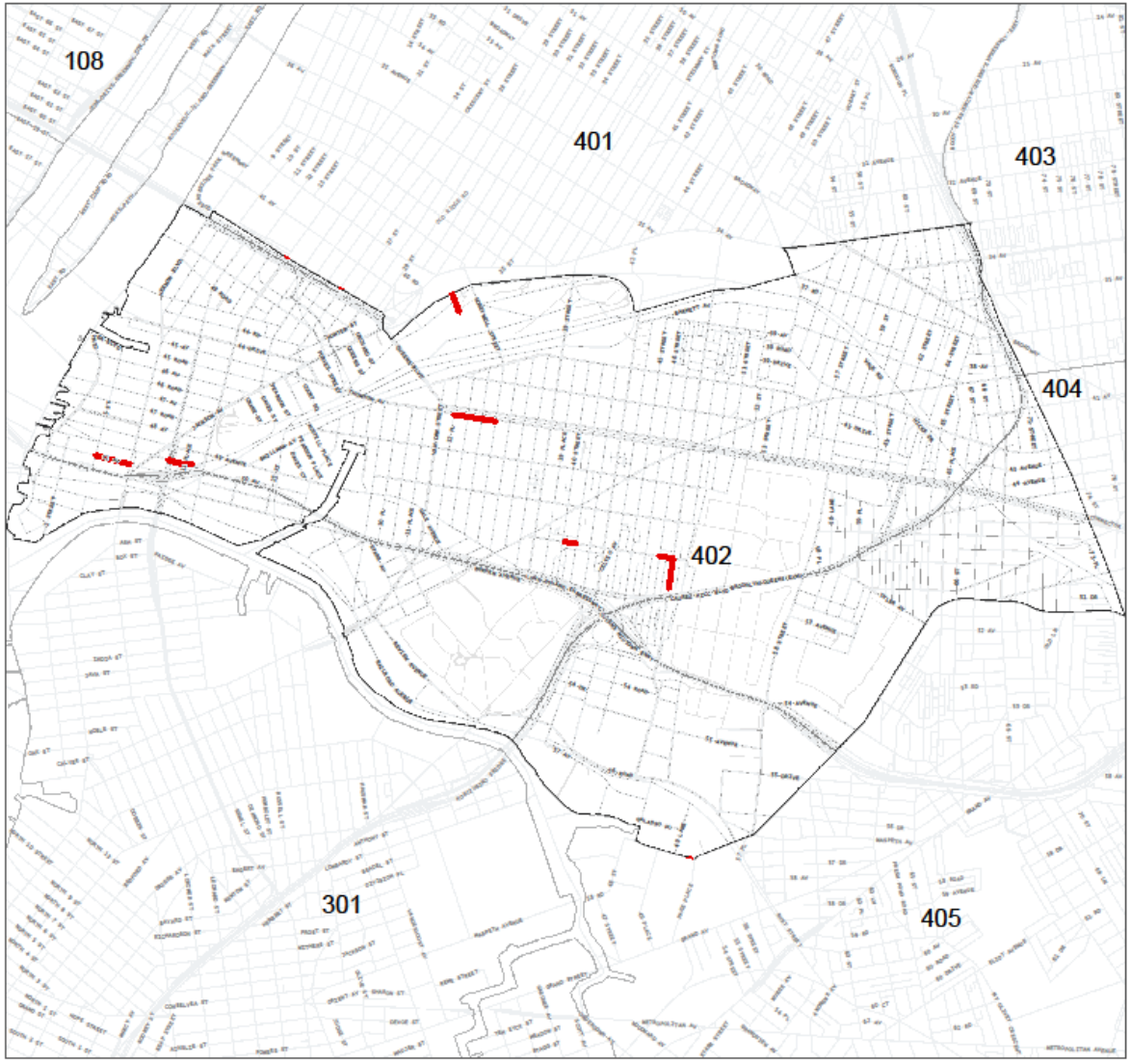

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2020

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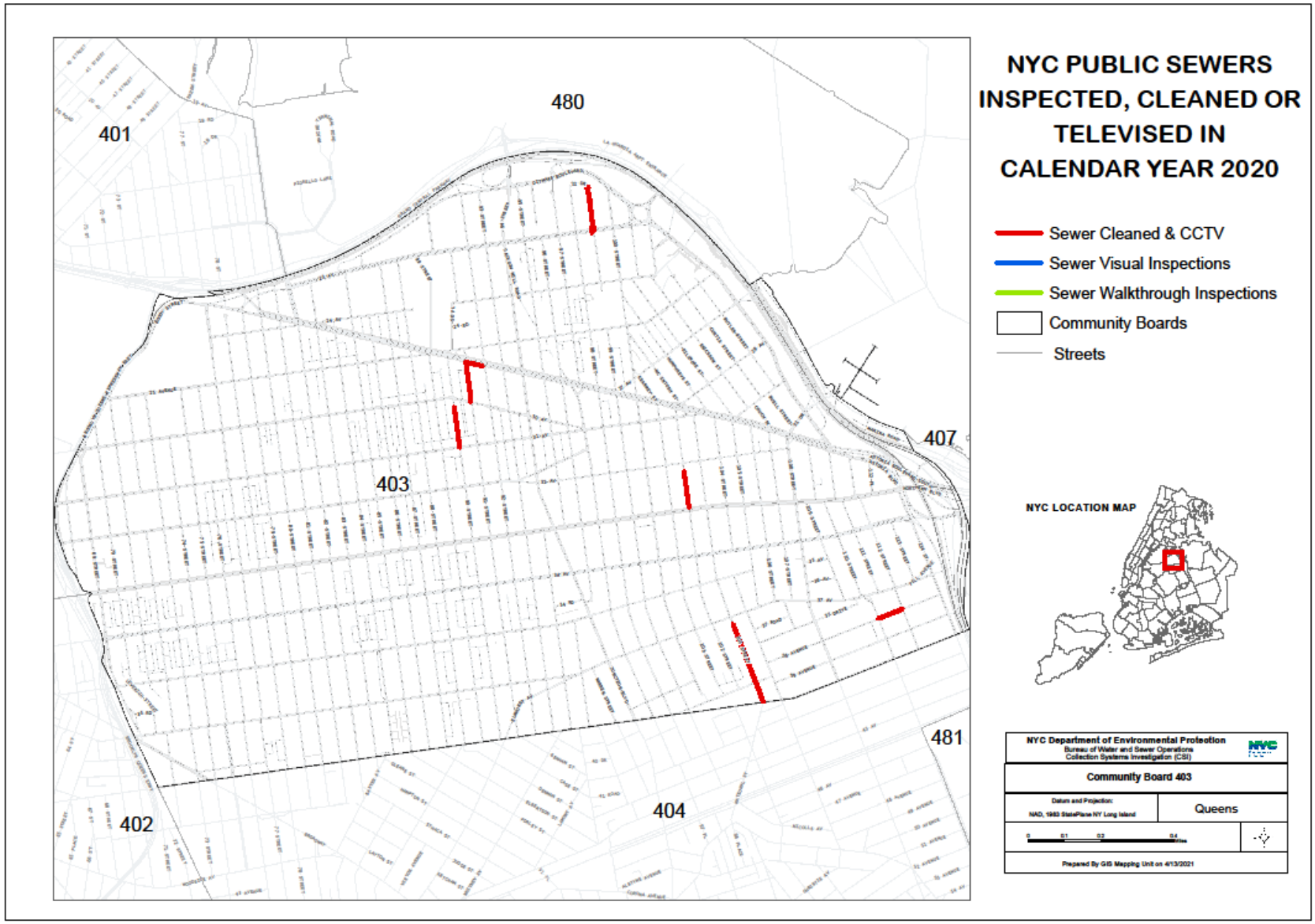
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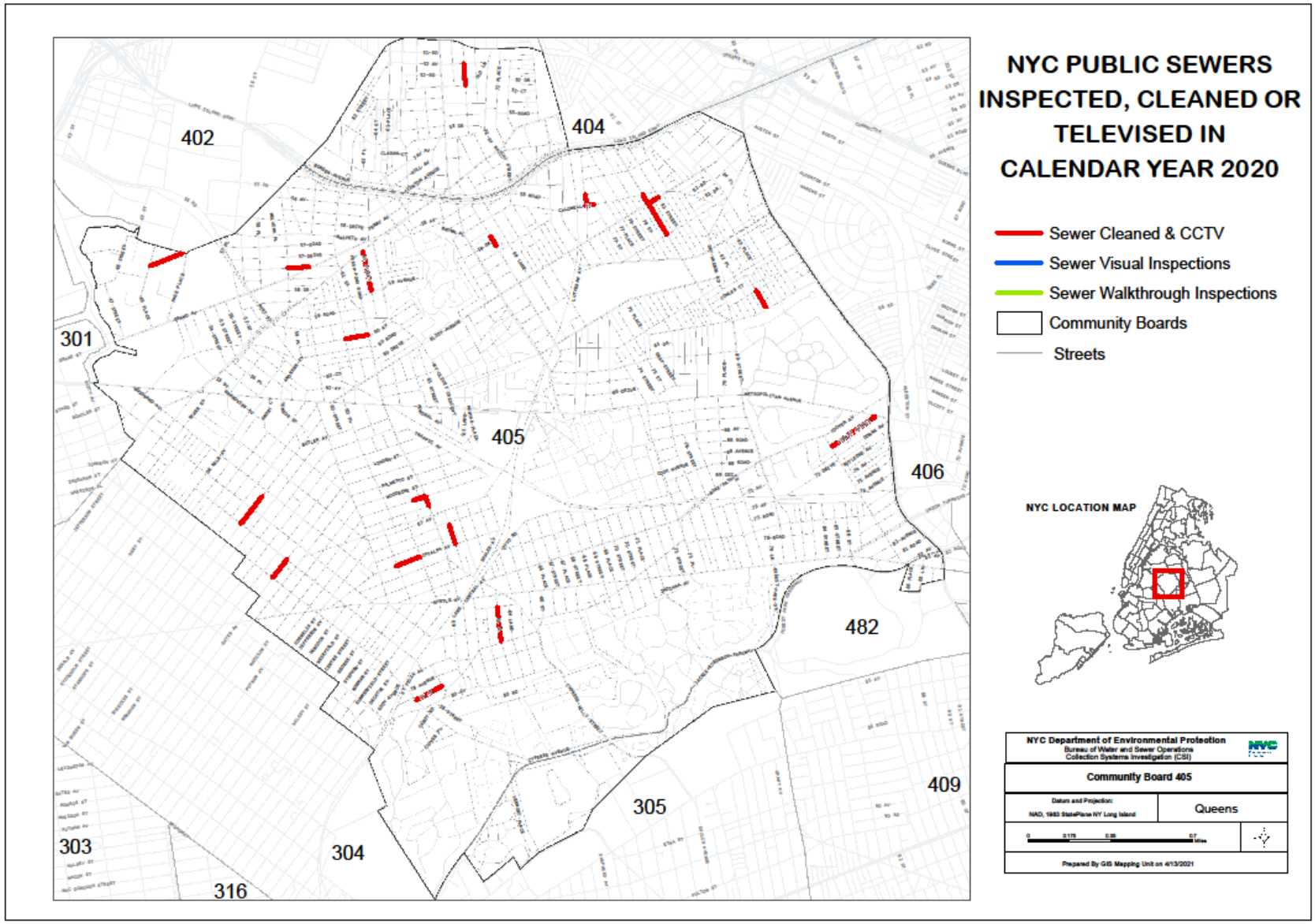
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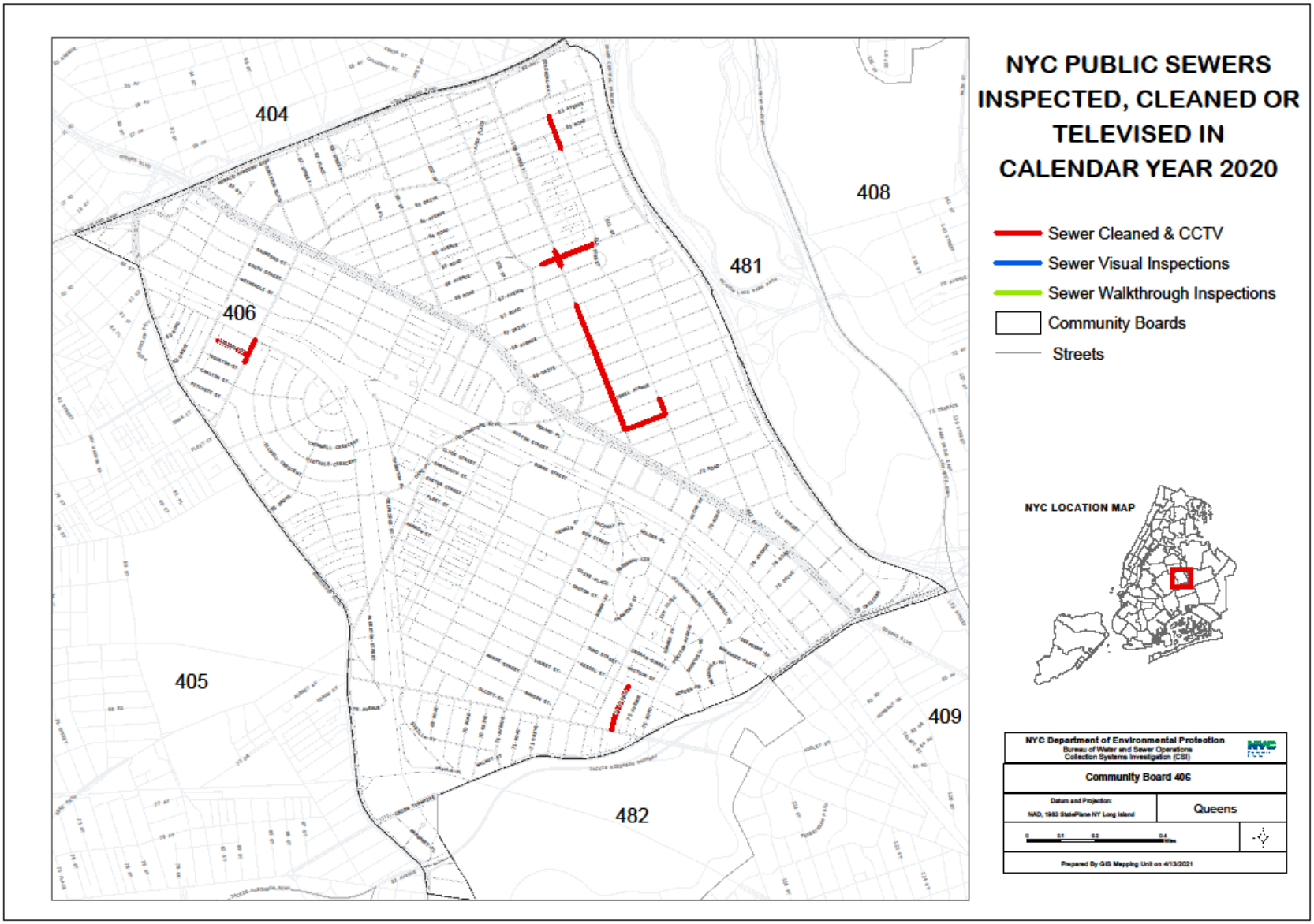
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NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2020
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NYC Department of Environmental Protection
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Collection Systems Investigation (CSI)
Community Board 406
Queens
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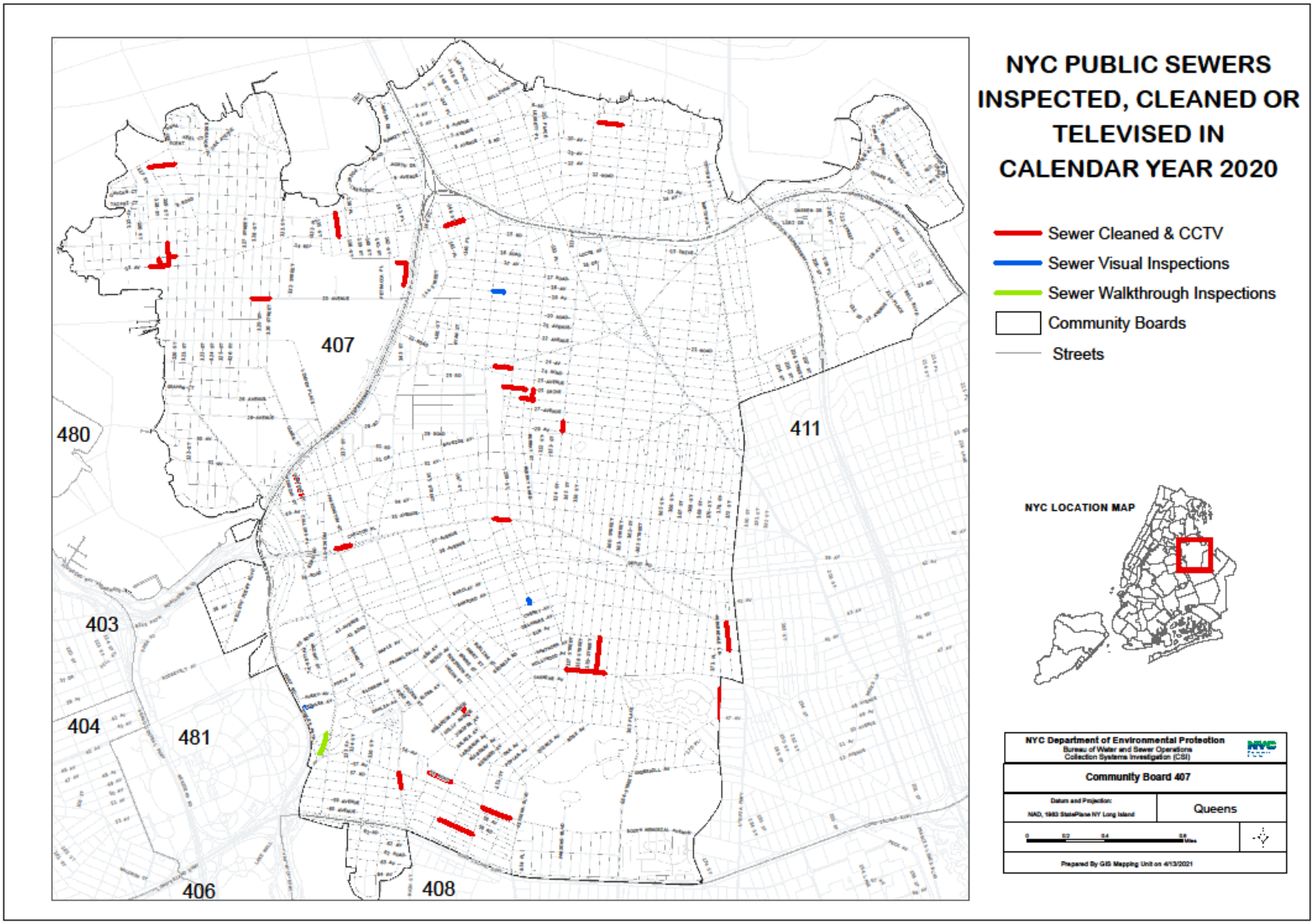
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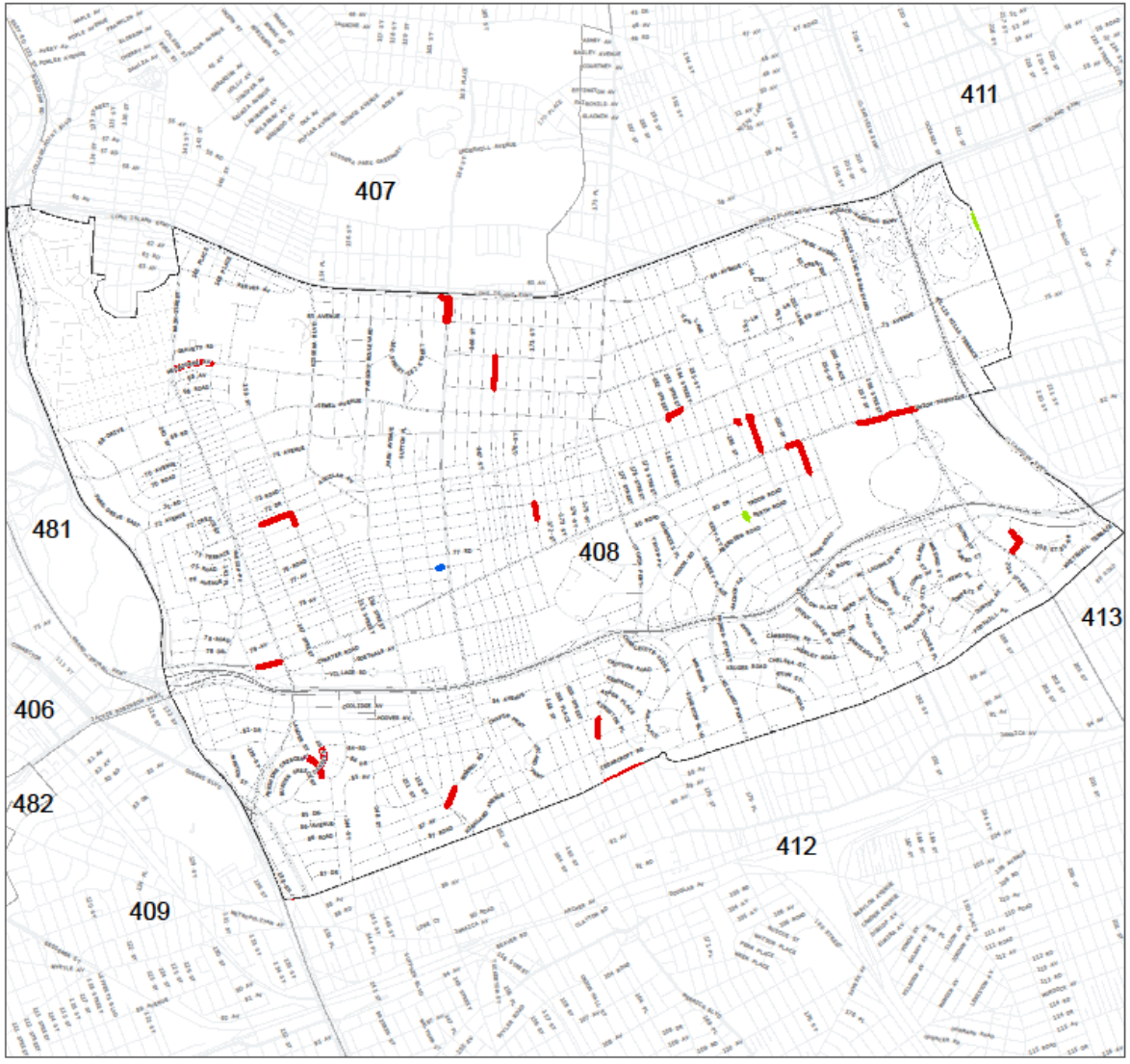

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Queens

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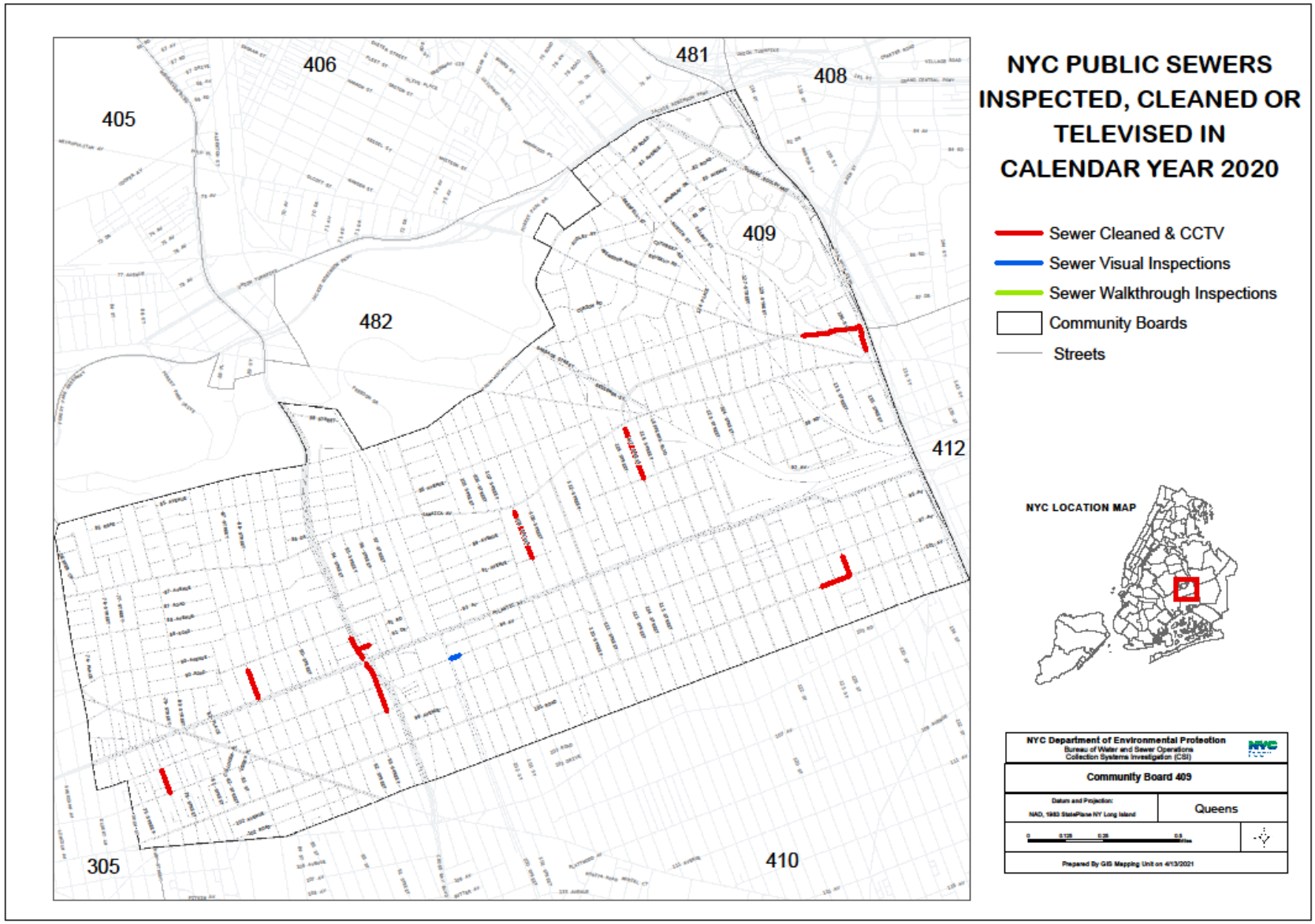
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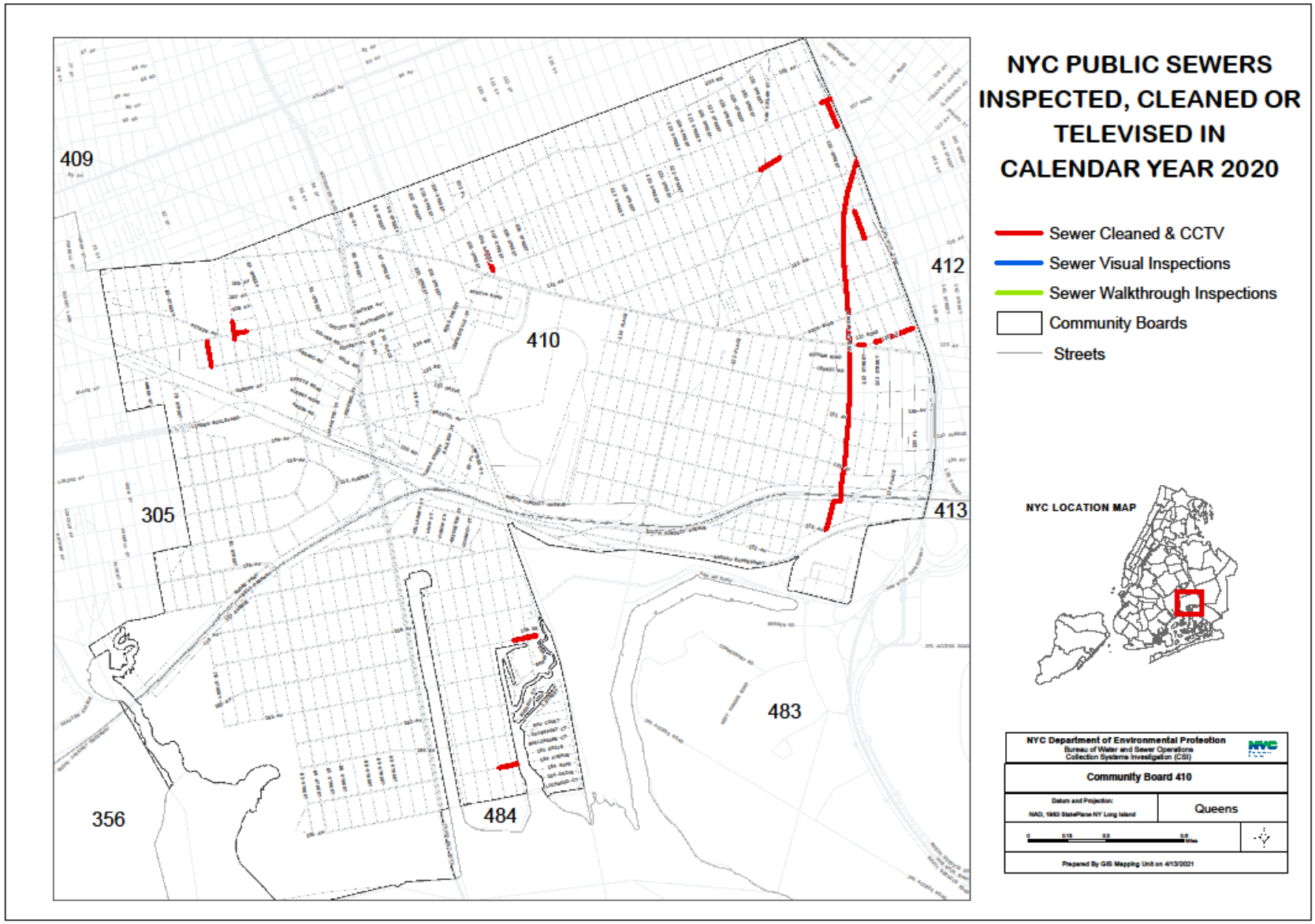
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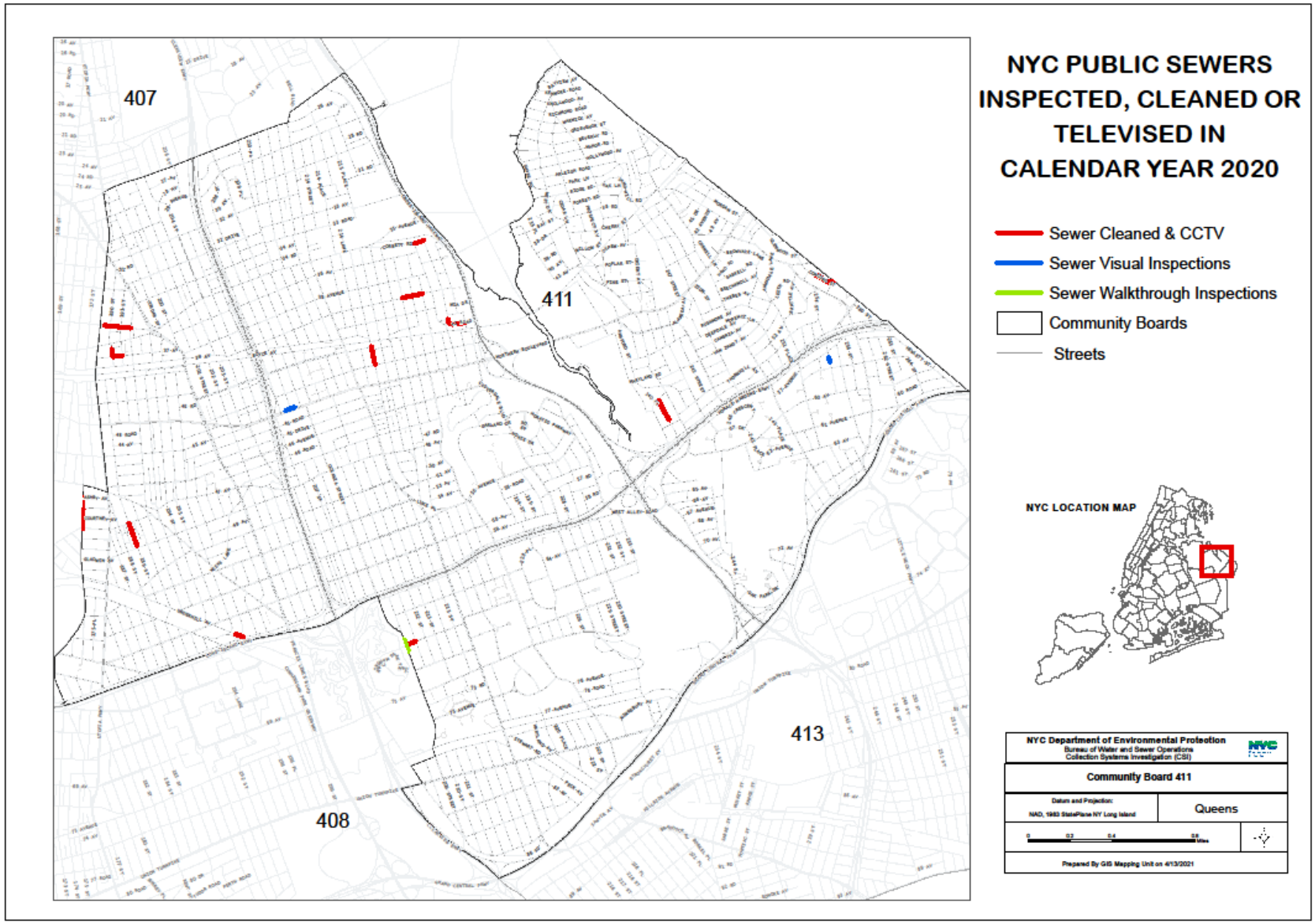
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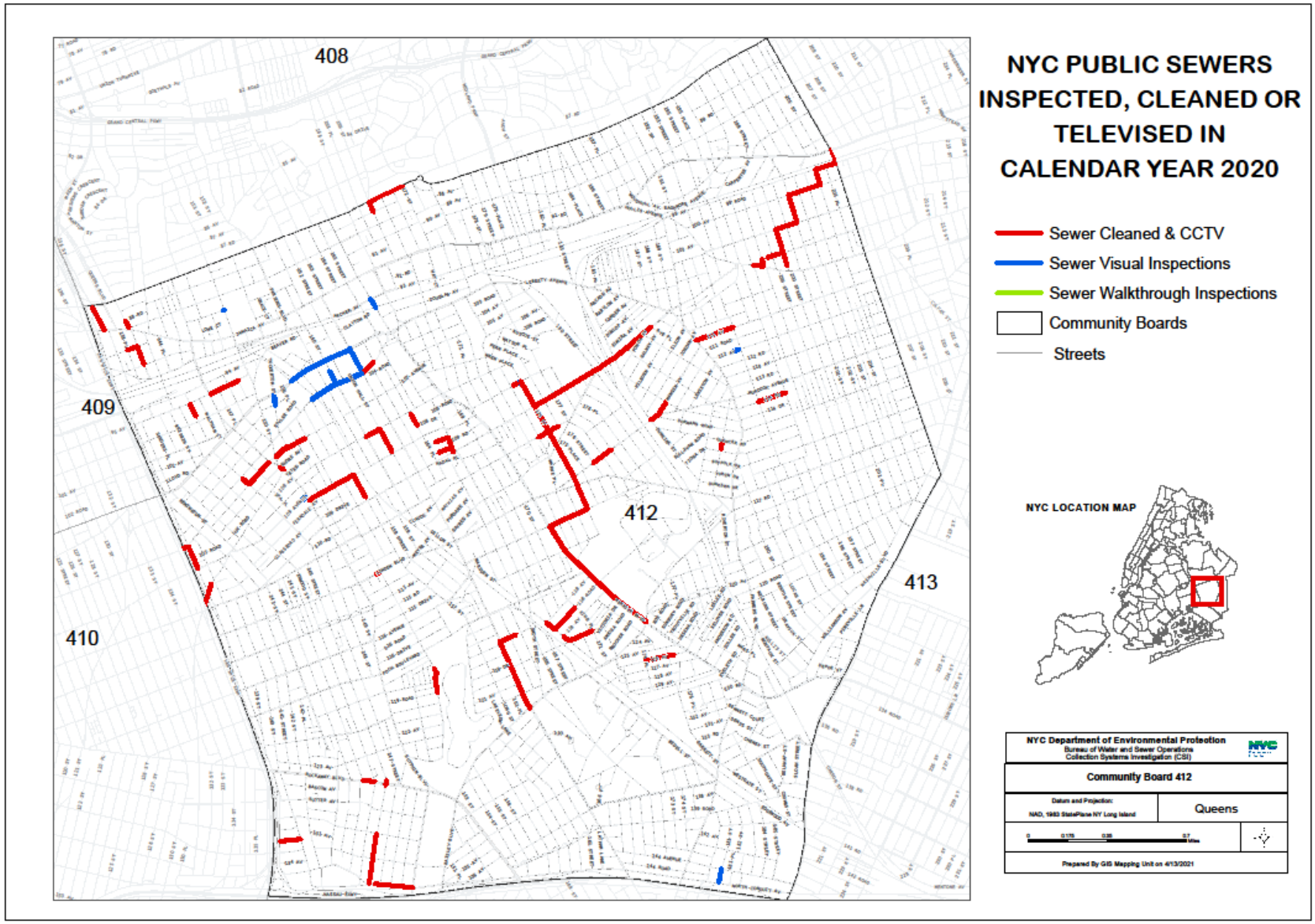
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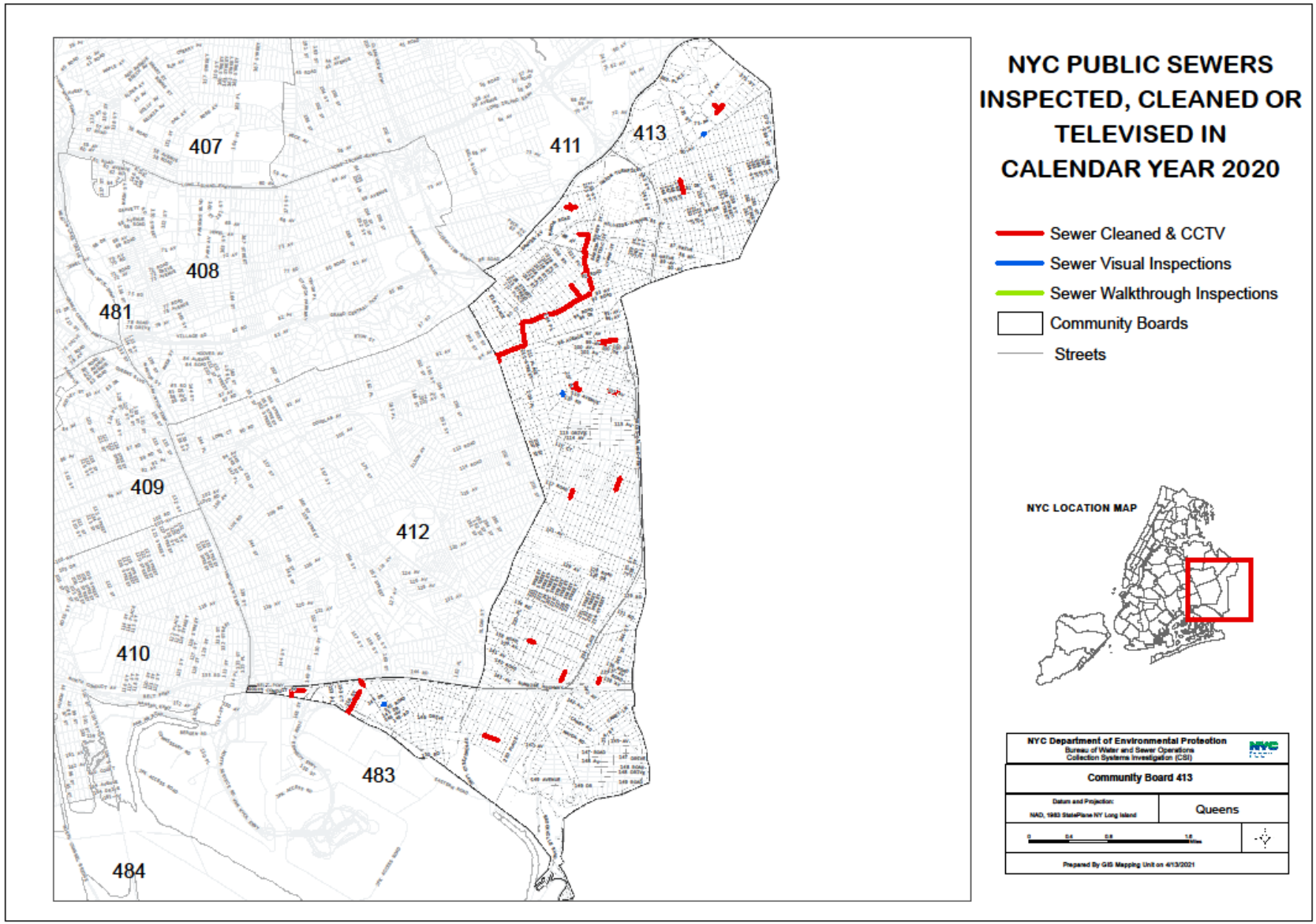
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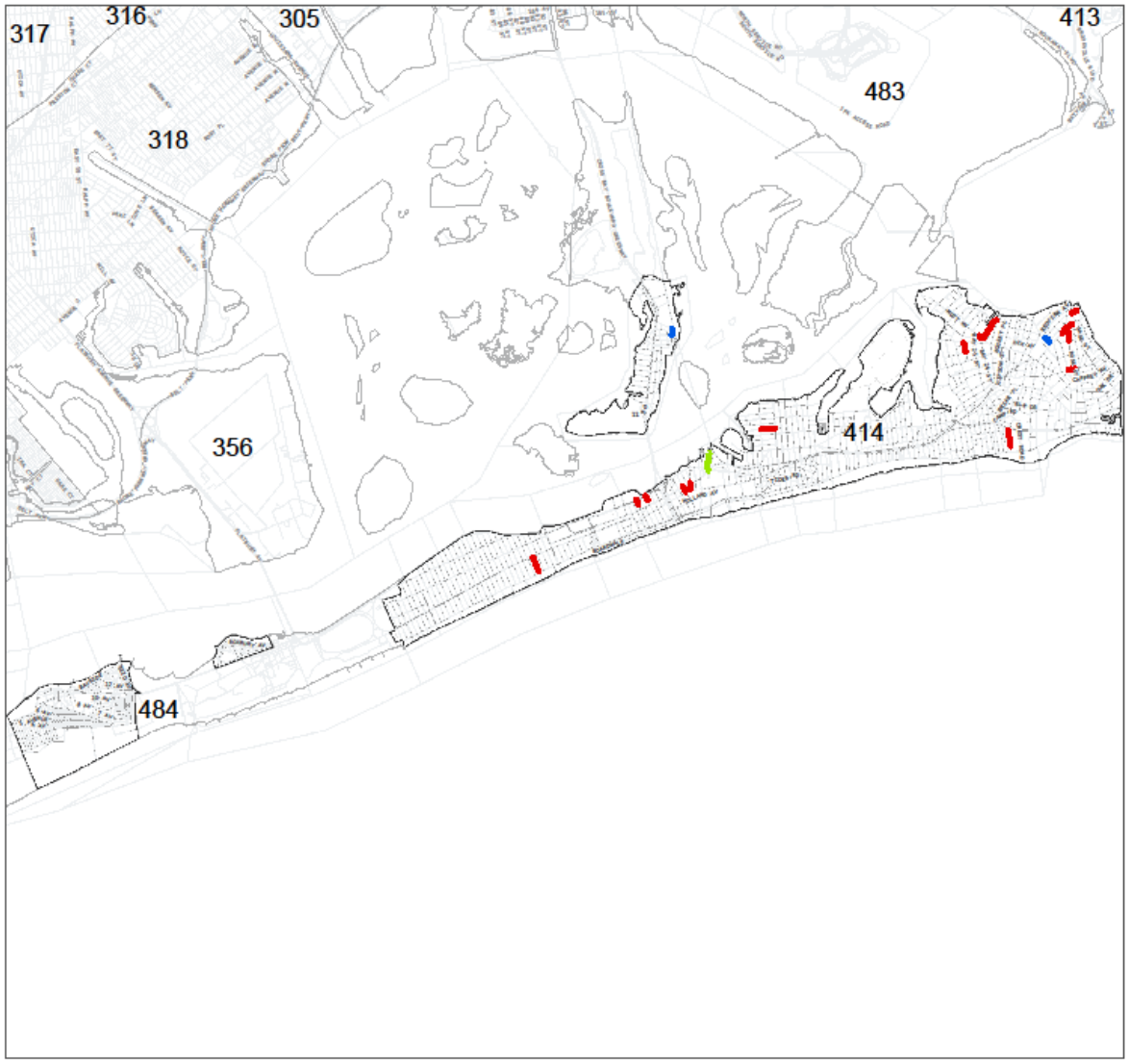

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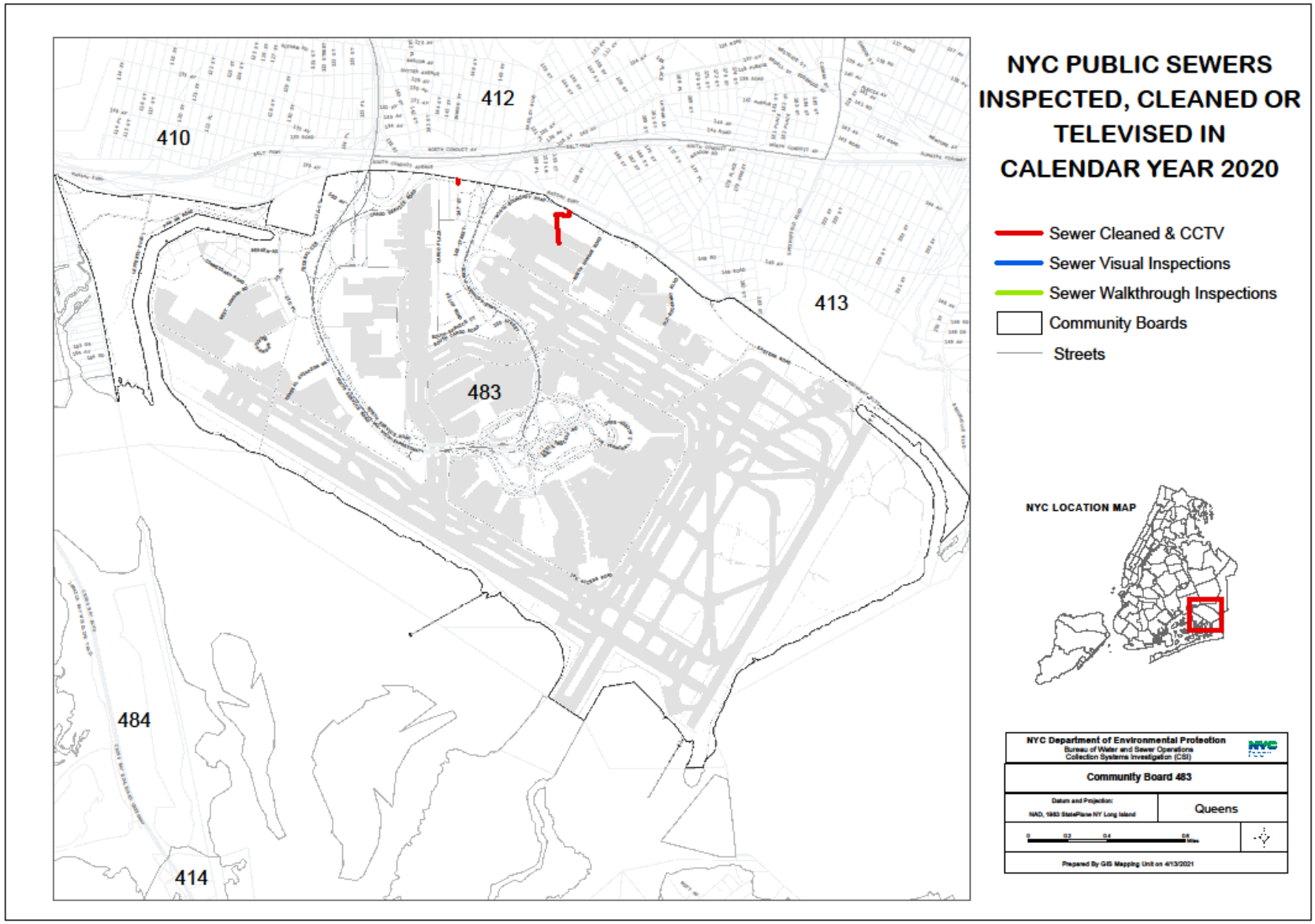
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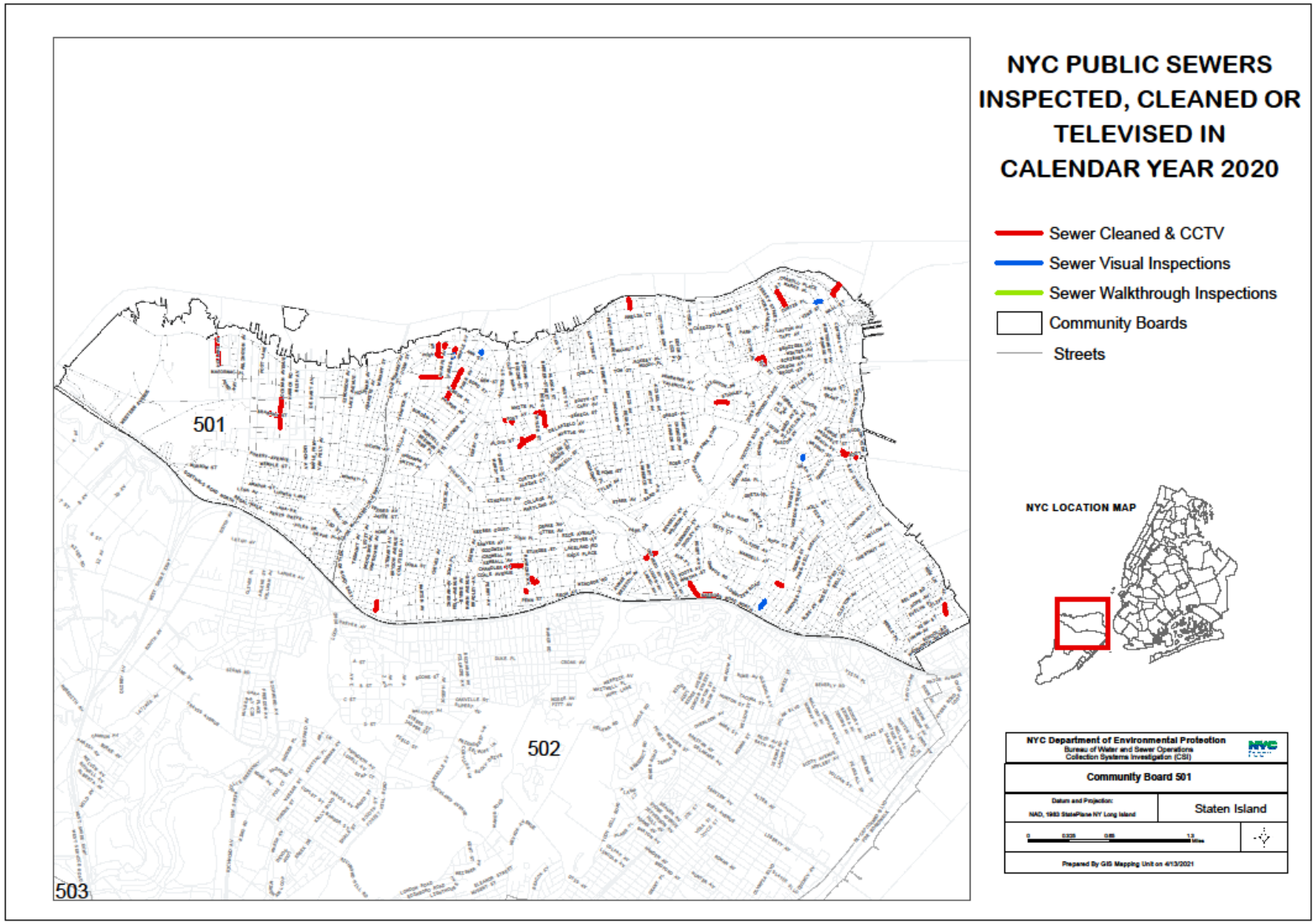
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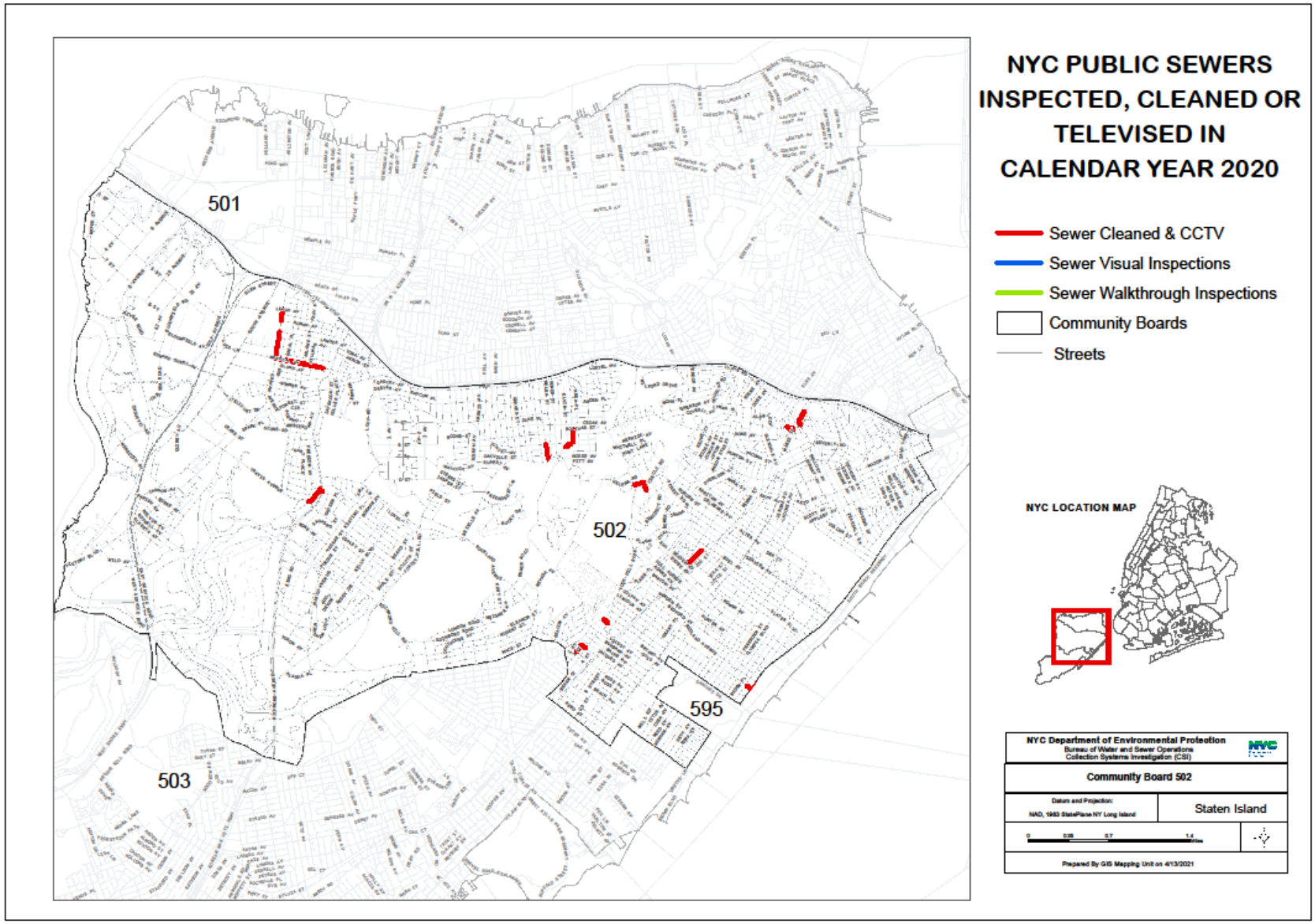
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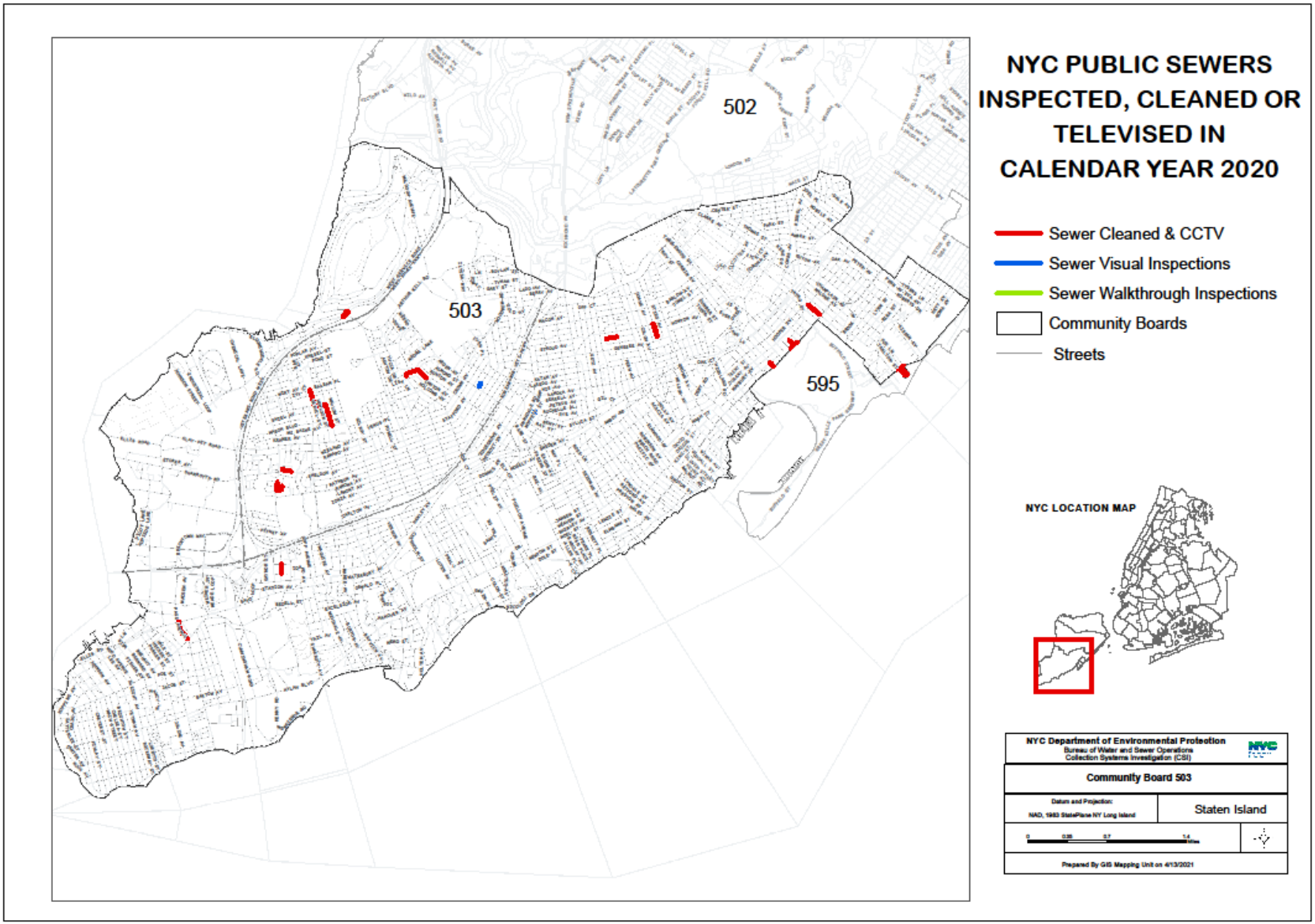
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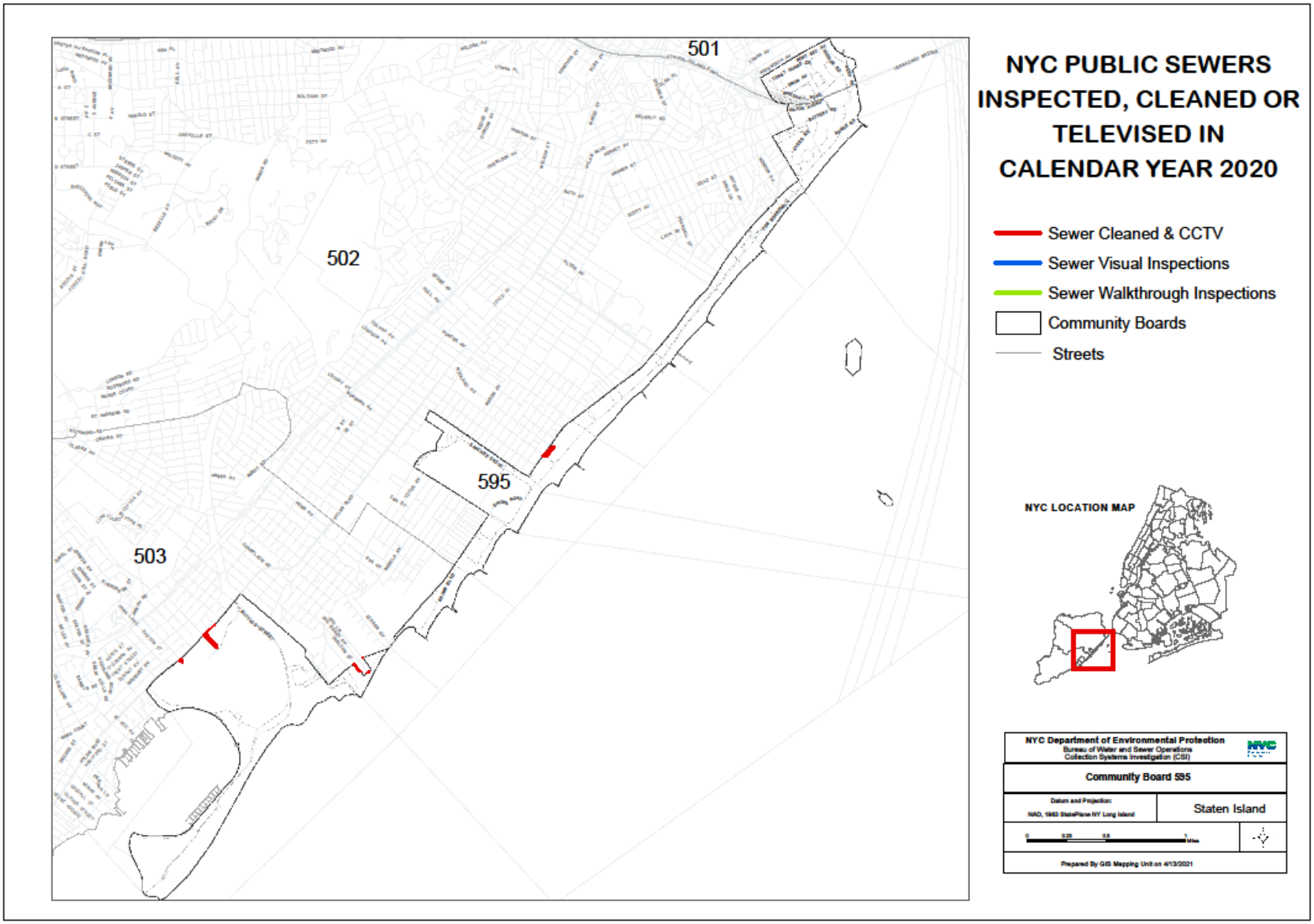
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Appendix 2.1.4: CSI Sewer Inspection Cleaning List 2020

Appendix 2.1.4.1: In-House Survey

Apeendix 2.1.4.1.1: Brooklyn

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
1	17-765	Hart St (315) bt Marcus Garvey Blvd and Lewis Av	TC	03	2/4/2020	2/4/2020	0	0	0
2	17-941	E 88 St (509) bt Foster Av and Bedell La	KB	18	12/11/2017	1/25/2020	0	0	0
3	18-027	Coney Island Av (3003) bt Guider Av and Brighnton 8 Ct	KB	13	1/25/2020	1/25/2020	0	0	0
4	18-230	W 6 St (1566) bt Av O and Av P	KB	11	1/25/2020	1/25/2020	0	0	0
5	18-737	N 11 St (86) bt Wythe Av and Berry St	TC	01	1/23/2020	1/23/2020	0	0	0
6	18-895	E 17 St (629) bt Newkirk Av and Foster Av	MS	14	12/23/2020	12/23/2020	0	0	600
7	19-490	Evergreen Av (105) bt Melrose St and Jefferson St	TC	04	1/23/2020	1/23/2020	0	0	0
8	19-510	Neptune Av from W 8 St and W 12 St to Ocean Pkwy-CONISHPH04	TC	13	2/18/2020	43879	0	0	0
9	19-552	Coney Island Av (1709) bt Roder Av and Av N	MA	14	2/29/2020	2/29/2020	0	199	0
10	19-607	Ocean Av (2350) bt Av R and Av S	JS	15	3/4/2020	3/4/2020	0	0	0
11	19-648	4 Av (485) bt 11 St and 12 St	MS	06	1/9/2020	1/9/2020	0	0	130
12	19-656	Cortelyou Rd (110) bt McDonald Av and E 2 St	MS	12	1/3/2020	1/3/2020	0	0	300
13	19-657	Av K (4012) bt E 40 St and Albany Av	MS	18	1/23/2020	1/23/2020	0	0	297
14	19-671	15 Av (80-14) bt 80 St and 81 St	JS	11	3/4/2020	3/4/2020	0	0	0
15	19-701	Coney Island Av (880) bt Ditmas Av and 18 Av	MS	12	1/3/2020	1/3/2020	0	0	160
16	19-702	17 Av (5910) bt 59 St and 60 St	MS	12	4/28/2020	4/28/2020	0	0	540
17	19-755	E 16 St (1840) bt Av R and Moore Pl - Kelly Playground	KB	15	6/23/2020	6/23/2020	0	0	0
18	19-805	Mill Av (2150) bt Av U and Av V	RF	18	1/9/2020	1/28/2020	0	0	0
19	19-810	Wythe Av (29-41) bt N 14 St and N 13 St	KB	01	1/9/2020	1/9/2020	0	262	0
20	19-811	1 Av (5102) bt 51 St and 52 St-Shoreline Stabilization for Bush Termina	KB	07	2/4/2020	2/4/2020	0	0	0
21	19-812	Stanley Av (656) bt Van Siclen Av and Hendrix St	RF	05	1/8/2020	-	0	0	0
22	19-814	Wortman Av (271) bt Van Siclen Av and Schenck Av	RF	05	1/8/2020	1/8/2020	0	0	0
23	20-007	E 5 St (305) bt Albemarle Rd and Church Av	MS	12	7/7/2020	7/7/2020	0	0	215
24	20-009	E 2 St (533) bt Av C and Cortelyou Rd	MS	12	6/24/2020	6/24/2020	0	0	125
25	20-020	Richards St bt King St and Sullivan St	KB	06	1/27/2020	1/27/2020	0	260	0
26	20-021	Bush St bt Columbia St and Otsego St	KB	06	1/27/2020	1/27/2020	0	251	0
27	20-022	Bush St bt Henry St and Clinton St	KB	06	1/27/2020	1/27/2020	0	230	0
28	20-043	Powers St (33) bt Hope St and Lorimer St	MA	01	1/31/2020	1/31/2020	0	0	0
29	20-057	Stuart St (1925) bt Fillmore Av and Av S- JHS 278	TC	15	2/20/2020	2/20/2020	0	0	0
30	20-058	Benson Av (2630) bt Bay 43 St and Stillwell Av-Lafayette Educational	TC	13	2/20/2020	2/20/2020	0	0	0
31	20-059	Brighton 4 Rd (25) bt Brighton 4 St and Brighton 6 St - William E Grady	TC	13	2/20/2020	2/20/2020	0	0	0
32	20-061	Maspeth Av (287) bt Vandervoort Av and Newtown Creek Shoreline	TC	01	2/9/2020	2/9/2020	0	697	0
33	20-061A	Maspeth Av (287) bt Vandervoort Av and Newtown Creek Shoreline	TC	01	3/14/2020	3/14/2020	0	0	0
34	20-080	St Marks Av (863) bt Brooklyn Av and Kingston Av	TC	08	2/26/2020	2/26/2020	0	0	0
35	20-092	Bedford Av (1194-1202) bt Putnam Av and Jefferson Av	KB	03	3/6/2020	3/7/2020	0	285	0
36	20-093	Sheepshead Bay Rd (1780) bt Shore Pkwy and Emmons Av	MA	15	2/29/2020	2/29/2020	0	427	0
37	20-105	Virginia St (11-84) bt Central Av and Alonzo Rd	SA	14	3/2/2020	3/2/2020	0	0	0
38	20-110	E 5 St (1322) bt Av L and Av M	TC	12	3/4/2020	3/4/2020	0	0	0
39	20-119	Walworth St (91) bt Park Av and Myrtle Av	TC	03	7/14/2020	7/14/2020	0	0	0
40	20-120	New Jersey Av (307) bt Pitkin Av and Belmont Av	TC	05	6/18/2020	6/18/2020	0	0	0
41	20-166	E 3 St (2354) bt Av X and Av W	JS	15	3/4/2020	3/4/2020	0	0	0
42	20-167	Fulton St (1303) bt Nostrand Av and Verona Pl	SA	03	3/18/2020	3/18/2020	0	0	0
43	20-176	Richardson St (24) bt Union Av and Lorimer St	KB	01	3/11/2020	3/11/2020	0	587	0
44	20-200	Bay St (155) bt Henry St and Clinton St	TL	06	4/23/2020	4/23/2020	0	0	0
45	20-204	Wortman Av (271) bt Van Siclen Av and Schenck Av	TC	05	5/1/2020	5/1/2020	0	0	0
46	20-205	Stanley Av (656) bt Van Siclen Av and Hendrix St	TC	05	5/1/2020	5/1/2020	0	0	0
47	20-269	Ocean Av (3121) bt Voorhies Av and Shore Pkwy	TC	15	7/7/2020	7/7/2020	0	871	0
48	20-275	E 5 St (1948) bt Ave R and Ave S	JS	15	7/6/2020	7/6/2020	0	0	0
49	20-292	Atlantic Av (424) bt Bond St and Nevins St	LJ	02	5/28/2020	5/28/2020	0	75	0
50	20-300	Glenwood Rd (5520) bt E 55 St and E 56 St	TC	18	6/11/2020	6/11/2020	0	0	0
51	20-304	Warren St (617) bt 4 Av and 5 Av	TC	06	6/11/2020	6/11/2020	0	0	0
52	20-309	Av U and E 15 St	MS	15	12/3/2020	12/3/2020	0	0	200
53	20-327	Av U (4112) bt Coleman St and Hendrickson	TC	18	7/1/2020	7/1/2020	0	0	0
54	20-351	Johnson Av (169) bt Manhattan Av and Graham Av	TC	01	8/19/2020	8/19/2020	0	241	0
55	20-352	Girard St (182) bt Hampton Av and Oriental Blvd	TC	15	7/8/2020	7/8/2020	0	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
56	20-387	Morgan Av (77) bt Harrison Pl and Ingraham St	TC	01	8/18/2020	8/18/2020	0	448	0
57	20-390	Franklin St (1) bt Kent Av and N 15 St	TC	01	11/4/2020	11/4/2020	350	0	0
58	20-392	Gravesend Neck Rd (18) bt Van Sicklen St and Gravesend Cemetery B	TC	15	9/8/2020	9/8/2020	0	0	0
59	20-412	Carroll St (345) bt Hoyt St and Bond St	KB	06	8/18/2020	8/18/2020	0	0	0
60	20-414	18 Av (4024) bt E 5 St and E 4 St	KB	14	8/18/2020	8/18/2020	0	0	0
61	20-436	Bushwick Av (925) and Greene Av	TC	04	8/19/2020	8/19/2020	0	90	0
62	20-450	Wythe Av (168-170) bt N 7 St and N 6 St	KB	01	8/25/2020	8/25/2020	0	365	0
63	20-464	W 23 St (2945) bt Mermaid Av and Surf Av	TC	13	9/2/2020	9/2/2020	0	0	0
64	20-464A	W 23 St (2946) bt Mermaid Av and Surf Av	TC	13	9/11/2020	9/11/2020	0	0	0
65	20-464B	W 23 St (2832) bt Neptune Av and Mermaid Av	TC	13	9/11/2020	9/11/2020	0	0	0
66	20-464C	Mermaid Av and Surf Av	TC	13	9/11/2020	9/11/2020	0	0	0
67	20-464D	Neptune Av (4001) bt Surf Av and B 45 St	TC	13	9/11/2020	9/11/2020	0	0	0
68	20-472	Flatbush Av (100) bt Schermerhorn St and State St	TC	02	9/16/2020	9/16/2020	330	0	0
69	20-516	15 St (100) bt 3 Av and 4 Av	TC	07	9/25/2020	9/25/2020	0	0	0
70	20-537	Manhattan Av (4314) bt Cypress Av and Maple Av	TC	13	9/18/2020	9/18/2020	0	286	0
71	20-553	Dean St (430) bt 4 Av and 5 Av	KB	06	10/13/2020	10/13/2020	0	0	0
72	20-556	Cadman Plaza E (225) bt Red Cross Pl and Tillary St	TC	02	9/29/2020	9/29/2020	0	0	0
73	20-566	Monument Walk (24) bt Navy St and St Edwards St	JS	02	9/9/2020	9/9/2020	0	0	0
			PR	02	9/9/2020	9/9/2020	0	0	0
74	20-568	E 89 St (742) bt Glenwood Rd and Flatlands Ave	JS	318	11/16/2020	11/16/2020	0	0	0
75	20-573	Prospect Av (393) bt 7 Av and 8 Av	KB	07	10/13/2020	10/13/2020	0	0	0
76	20-578	Wilson Av (390) bt Palmetto St and Woodbine St	MS	04	10/27/2020	10/27/2020	0	0	200
77	20-601	W 19 St (2837) bt Neptune Av and Mermaid Av	TC	13	10/19/2020	10/19/2020	0	819	0
78	20-609	Adams St bt Plymouth St and E River	KB	02	10/15/2020	10/15/2020	0	104	0
79	20-618	Surf Av (1607) bt W 16 St and W 17 St	KB	13	11/19/2020	11/19/2020	0	232	0
80	20-618A	Surf Av (1607) bt W 16 St and W 17 St	KB	13	11/19/2020	11/19/2020	0	494	0
81	20-638	Cropsey Av (3035-3039) bt Coney Island Creek Shoreline and Hart Pl	TC	13	11/16/2020	11/16/2020	0	0	0
82	20-638A	Cropsey Av (3035-3039) bt Coney Island Creek Shoreline and Hart Pl	TC	13	11/24/2020	11/24/2020	0	0	0
83	20-651	Brooklyn Av (1026) bt Holy Cross Cemetery Bndy and Tilden Av	TC	17	11/13/2020	11/13/2020	0	0	0
84	20-653	Livonia Av (7) bt Howard Av and Grafton St	TC	16	11/13/2020	11/13/2020	0	0	0
85	20-666	B 38 St (3823) bt Atlantic Av and Surf Av	KB	13	12/4/2020	12/4/2020	0	0	0
86	20-666A	B 38 St (3823) bt Atlantic Av and Surf Av	KB	13	12/4/2020	12/4/2020	0	0	0
87	20-667	Cortelyou Rd (1921) bt E E 19 St and Ocean Av	TC	14	11/16/2020	11/16/2020	0	0	0
88	20-711	Smith St (628) bt Sigourney St and Halleck St	TC	06	12/14/2020	12/14/2020	0	0	0
89	20-712	Fulton St (625) bt Hudson Av and Rockwell Pl	TC	02	12/14/2020	12/14/2020	0	334	0
90	21-004	Junius St and Linden Blvd	TC	16	12/1/2020	12/1/2020	257	0	0

Apeendix 2.1.4.1.2: Manhattan

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
91	17-965	Park Pl (53) bt Church St and W Broadway	JS	01	4/14/2020	4/14/2020	0	0	0
92	18-451	Greenwich St (125) bt Albany St and Thames St	JS	01	4/14/2020	4/14/2020	0	0	0
93	19-301A	Laight St (13-17) bt St Johns La and Varick St	TC	01	1/23/2020	1/23/2020	0	0	0
94	19-492	S St (10) bt Whithall St and Broad St	RF	01	7/29/2019	2/22/2020	0	0	0
95	20-024	FDR Dr bt E Houston St and E 4 St	TC	03	5/27/2020	5/27/2020	0	0	0
96	20-027	Hudson St (310) bt Spring St and Vandam St	LJ	02	2/1/2020	2/1/2020	0	100	0
97	20-052	W 28 St (530) bt High Line and 11 Av	MA	04	2/19/2020	2/19/2020	0	0	0
98	20-067	7 Av (2581) bt W 149 St and W 150 St - IS 10 Tandem PS 200	TC	10	2/19/2020	2/19/2020	0	0	0
99	20-068	Frederick Douglass Blvd (2987) and Harlem River Dr SR W - PS 46	TC	10	2/19/2020	2/19/2020	0	0	0
100	20-079	E 16 St (16) bt 5 Av and Union Sq W	KB	05	3/7/2020	3/7/2020	0	413	0
101	20-103	Central Park S (200) bt Broadway and 7 Av	JS	05	4/1/2020	4/1/2020	0	0	0
102	20-183	St Nicholas Av (1412) bt W 180 St and W 181 St	CO	12	3/24/2020	3/24/2020	0	300	0
			JS	12	3/24/2020	3/24/2020	0	0	0
103	20-240	River Terr and Chambers St	TC	01	5/14/2020	5/14/2020	0	0	0
104	20-322	Rivington St (45) bt Forsyth St and Eldridge St	KB	03	8/20/2020	8/20/2020	0	0	0
105	20-322A	Rivington St (45) bt Forsyth St and Eldridge St	KB	03	8/20/2020	8/20/2020	0	0	0
106	20-416	Broadway (3379) bt Hamilton Pl and W 137 St	TC	09	7/27/2020	7/27/2020	0	64	0
107	20-439	W 215 St (530) bt Park Ter E and Park Ter W	TC	12	9/14/2020	9/14/2020	0	253	0
108	20-439A	W 215 St (530) bt Park Ter E and Park Ter W-Amber Charter School	KB	12	9/22/2020	9/22/2020	0	0	0
109	20-451	Grand St (74) bt Wooster St and Greene St	KB	02	8/20/2020	8/20/2020	0	0	0
110	20-452	York Av (1393) bt E 74 St and E 75 St	KB	08	8/18/2020	8/18/2020	0	230	0
111	20-552	5 Av (689) bt E 54 St and E 55 St	TC	05	12/4/2020	12/4/2020	288	0	0
112	20-559	W 18 St (351) bt 8 Av and 9 Av	KB	04	9/30/2020	9/30/2020	0	0	0
113	20-603	Forsyth St bt Delancey St and Rivington St	TC	03	12/10/2020	12/10/2020	0	0	0
114	20-688	Outfall NCM-078-Regulator	CJ		11/24/2020	11/24/2020	0	88	0

Apeendix 2.1.4.1.3: Queens

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
115	13-156	111 Av (155-04)	JS	12	5/5/2020	5/5/2020	0	0	0
116	13-513	157 St (109-17) bt 109 Av and Brinkerhoff Av	JS	12	5/5/2020	5/5/2020	0	0	0
117	14-037	109 Av (153-14)	JS	12	5/5/2020	5/5/2020	0	0	0
118	15-638	81 St (153-41)	SA	10	3/3/2020	3/3/2020	0	0	0
119	15-639	149 Av (80-15)	SA	10	3/3/2020	3/3/2020	0	0	0
120	15-640	82 St (153-38)	SA	10	3/3/2020	3/3/2020	0	0	0
121	15-933	Cozine Av (709)	PR	05	6/2/2020	6/2/2020	0	1,208	0
122	16-212	Downing St (31-25)	LJ	07	1/26/2020	1/26/2020	0	0	0
123	17-777	College Point Blvd (22-30) bt 22 Av and 23 Av	LJ	07	1/26/2020	1/26/2020	0	0	0
124	18-098	Hook Creek Blvd (145-25) bt 257 St and Frankton St	TC	13	1/23/2020	1/23/2020	0	0	0
125	18-372	26 Av (8-01) bt 4 St and 9 St	LJ	01	1/26/2020	1/26/2020	0	0	0
126	18-437	84 St (52-37) bt Bend and 54 Av	LJ	04	1/26/2020	1/26/2020	0	0	0
127	18-531	67 St (41-33) bt 41 Av and Woodside Av	TC	02	1/21/2020	1/21/2020	0	0	0
128	18-840	40 Rd (131-12) bt Delong St and College Point Blvd	JS	07	4/7/2020	4/7/2020	0	0	0
129	19-019	250 St (82-65) bt 82 Av and 83 Av	JS	13	7/13/2020	7/14/2020	0	0	0
130	19-069	B Channel Dr bt B 145 St and B 108 St-QED1030B-SANDHW11B	JS	14	6/22/2020	6/22/2020	0	0	0
131	19-121	Grand Av (66-28) bt Hamilton Pl and 55 Dr	TC	05	2/23/2020	2/23/2020	0	0	0
132	19-262	93 rd (237-01) bt Gettysburg St and 239 St	JS	13	4/7/2020	4/7/2020	0	0	0
133	19-470	Bowne St (41-62) bt Bend and Franklin Av	KB	07	2/5/2020	2/14/2020	0	0	0
134	19-476	Hillside Av (136-06) bt 136 St and Van Wyck Exp SR W	JS	09	5/22/2020	5/22/2020	0	0	0
135	19-710	Ellwell Crst (63-39) bt Carlton St and 64 Rd	MA	06	11/14/2019	1/7/2020	0	0	0
136	19-738	Van Wyck Expy and Linden Blvd - Inspect multiple lines along the Van	LJ		1/26/2020	1/26/2020	0	0	0
137	19-738A	Van Wyck Expy and Linden Blvd - Inspect multiple lines along the Van	LJ		1/26/2020	1/26/2020	0	0	0
138	19-738B	Van Wyck Expy and Linden Blvd - Inspect multiple lines along the Van	LJ		1/26/2020	1/26/2020	0	0	0
139	19-738C	Van Wyck Expy and Linden Blvd - Inspect multiple lines along the Van	LJ		1/26/2020	1/26/2020	0	0	0
140	19-738D	Van Wyck Expy and Linden Blvd - Inspect multiple lines along the Van	LJ		1/26/2020	1/26/2020	0	0	0
141	19-802	Liberty Av and 157 St - York College Athletic Field	MA	12	1/27/2020	1/31/2020	0	921	0
142	19-802A	South Rd and 157 St - York College Athletic Field	MA	12	1/27/2020	1/31/2020	0	1,395	0
143	19-802B	158 St and Liberty Av - York College Athletic Field	MA	12	1/27/2020	1/31/2020	0	0	0
144	19-802C	159 St and Liberty Av - York College Athletic Field	MA	12	1/27/2020	1/31/2020	0	174	0
145	19-807	14 St (30-99) bt 30 Dr and 31 Av	KB	01	1/13/2020	1/13/2020	0	0	0
146	19-809	149 Pl (42-36) bt Ash Av and Beech Av	TC	07	1/6/2020	1/6/2020	0	132	0
147	20-011	111 Rd (190-58) bt Farmers Blvd and 194 St	TC	12	1/28/2020	1/28/2020	0	0	0
148	20-012	4 Av (145-33) bt Whitestone Exp SR E and 147 St	TC	07	2/3/2020	2/3/2020	0	0	0
149	20-014	130 St (91-20) bt 91 Av and 92 Av	TC	09	2/21/2020	2/21/2020	0	0	0
150	20-028	B Channel Dr (14-56) bt Hassock St and Nassau Cnty Bndy	TC	14	1/28/2020	1/28/2020	0	0	0
151	20-041	B 84 St and B Channel Dr	MS		2/4/2020	2/4/2020	0	0	910
152	20-042	Ketcham St (42-67) bt Pettit Av and Britton Av	LJ	04	1/30/2020	1/30/2020	0	97	0
153	20-044	79 St (350) Beach bt B Channel Dr and Body of Water	RF	14	2/4/2020	2/4/2020	0	0	0
154	20-046	37 Av (58-09) bt 58 St and 59 St	MA	02	2/9/2020	2/9/2020	0	0	0
155	20-069	57 St (58-74) bt Grand Av and 58 Dr - PS 9 - Old PS 86	TC	06	2/18/2020	2/18/2020	0	0	0
156	20-070	35 Av (214-43) bt 214 Pl and 214 Ln - PS 41	TC	11	2/18/2020	2/18/2020	0	0	0
157	20-071	108 Av (155-02) bt 155 St and 156 St - PS 48	TC	12	2/18/2020	2/18/2020	0	0	0
158	20-073	205 St (23-73) bt 23 Av and 26 Av	MA	07	2/21/2020	2/21/2020	0	0	0
159	20-075	Liberty Av (160-02) bt 160 St and Guy R Brewer Blvd	MA	12	2/17/2020	2/23/2020	0	394	0
160	20-076	Guy R Brewer Blvd bt Liberty Av and Tuskegee Airmen Way	MA	12	2/17/2020	2/23/2020	0	698	0
161	20-077	Liberty Av bt 160 St and Guy R Brewer Blvd	MA	12	2/17/2020	2/23/2020	0	609	0
162	20-078	Tuskegee Airmen Way bt 160 St and Guy R Brewer Blvd	MA	12	2/17/2020	2/23/2020	0	1,315	0
163	20-085	253 St (142-27) bt Memphis Av and Weller Av	MA	13	2/25/2020	2/25/2020	0	0	0
164	20-086	3 St (26-35) bt 26 Av and 27 Av	TC	01	2/25/2020	2/25/2020	0	0	0
165	20-095	78 Av (162-19) bt 162 St and 164 St	LJ	08	2/26/2020	2/26/2020	0	103	0
166	20-096	6 Av (145-75) bt Whitestone Exp SR E and 147 St	KB	07	3/9/2020	3/9/2020	0	0	0
167	20-097	Ridge Rd (261) bt Center Dr and E Dr	MA	11	2/29/2020	2/29/2020	0	0	0
168	20-098	W (613) bt Noel Rd and E 6 Rd	TC	14	2/23/2020	2/23/2020	0	373	0
169	20-100	Astoria Blvd over BQE Bridge Bridge	RF	01	2/20/2020	2/20/2020	0	0	0
170	20-104	113 Av (155-18) bt 155 St and 156 St	SA	12	3/2/2020	3/2/2020	0	0	0
171	20-106	114 Rd (194-56) bt 194 St and 196 St	SA	12	3/2/2020	3/2/2020	0	0	0
172	20-107	94 St (40-69) bt Benham St and Case St	SA	04	3/3/2020	3/3/2020	0	0	0
173	20-139	145 Av (165-30) bt Rockaway Blvd and 167 St	LJ	13	3/10/2020	3/10/2020	0	116	0
174	20-140	129 St (118-68) bt Cedric Rd and Sutter Av	TC	10	3/10/2020	3/10/2020	0	0	0
175	20-141	124 St (149-05) bt 149 Av and N Conduit Av	KB	10	3/10/2020	3/10/2020	0	0	0
176	20-156	254 St (57-30) bt 57 Av and 58 Av	LJ	11	3/7/2020	3/7/2020	0	140	0
177	20-157	56 Rd (146-18) bt 146 St and 148 St	TC	07	3/9/2020	3/9/2020	0	0	0
178	20-165	S Conduit Av (153-20) bt Belt Pkwy EB Entrance 150 St and 153 Ln	TC	13	3/20/2020	3/20/2020	0	0	0
179	20-177	Steinway St (30-55) bt 30 Av and 31 Av	TC	01	4/7/2020	4/7/2020	0	304	0
180	20-184	Main St (57-29) bt 58 Av and 57 Rd	CO	07	3/24/2020	3/24/2020	0	300	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
181	20-185	137 St (13-04) bt 14 Av and 11 Av`	SA	07	3/18/2020	3/18/2020	0	0	0
182	20-187A	95 Av (101-01) bt 94 Av and 95 Av (aka 94-15 100 St)	TC	09	3/17/2020	3/17/2020	0	161	0
183	20-188	Union Tpke (257-09) bt 257 St and 258 St	LJ	13	3/21/2020	3/21/2020	0	151	0
184	20-224	E Hampton Blvd (58-30) bt 58 Rd and Horace Harding Expy SR N	TC	11	4/14/2020	4/14/2020	0	0	0
185	20-230	3 St (26-35) aka 3-01 27 Av bt 3 St and 4 St	TC	01	7/16/2020	7/16/2020	0	0	0
186	20-231	Powells Cove Dr (Malba Dr) bt Malba Dr and Parsons Blvd	LJ	07	5/21/2020	5/21/2020	0	0	0
187	20-243	110 Av (216-03) bt 216 St and 217 St	PR	13	6/24/2020	3/19/2021	0	118	0
188	20-264	Burling St (46-20) bt Holly Av and Jasmine Av	TC	07	5/5/2020	5/5/2020	0	0	0
189	20-276	135 St (114-06) bt Linden Blvd and 115 Ave	TC	10	5/20/2020	5/20/2020	0	0	0
190	20-277	129 St (97-14) bt 97 Ave and 101 Ave	TC	09	5/20/2020	5/20/2020	0	0	0
191	20-278	165 St (115-52) bt 115 Ave and 116 Ave	JS	12	5/20/2020	5/20/2020	0	0	0
192	20-279	Mangin Ave (186-17) bt Wood St and Murdock Ave	TC	12	5/20/2020	5/20/2020	0	0	0
193	20-281	Beach 120 St (138) bt Ocean Pr and Rockaway Beach Blvd	TC	14	5/20/2020	5/20/2020	0	0	0
194	20-294	Kissena Blvd (65-30) bt 65 Av and Driveway	TC	08	5/26/2020	5/26/2020	0	0	0
195	20-298	Springfield Blvd bt 48 Av and 49 Av - Alley Creek Retention	TC	11	6/3/2020	6/3/2020	0	0	0
196	20-301	Corona Av (88-14) bt 88 St and 48 Av	TC	11	6/25/2020	6/25/2020	0	0	0
197	20-305	44 Rd (10-20) bt 10 St and 11 St	KB	02	6/23/2020	6/23/2020	0	0	0
198	20-321	Nameoke Av bt Bayport Pl and Central Av -Construction of Nameoke	TC	14	6/25/2020	6/25/2020	0	814	0
199	20-330	N Conduit Av (100-03) bt Cohancy St and Rockaway Line	TC	10	7/15/2020	7/15/2020	0	171	0
200	20-349	181 St (144-14) bt 144 Av and Bend	TC	12	6/30/2020	6/30/2020	0	614	0
201	20-350	186 St (58-13) bt 58 Av and Horace Harding Expy SR N	TC	11	7/9/2020	7/9/2020	0	0	0
202	20-355	159 St (43-47) bt 43 Av and 45 Av	TC	07	7/9/2020	7/9/2020	0	0	0
203	20-357	109 Ave (147-60) bt Liverpool St and Sutphin Blvd	PR	12	6/24/2020	6/24/2020	0	400	0
204	20-358	112 Ave (190-63) bt 194 St and Farmers Blvd	PR	12	6/24/2020	6/24/2020	0	675	0
205	20-388	189 St (47-49) bt 47 Av and 48 Av	TC	11	8/5/2020	8/5/2020	0	0	0
206	20-389	233 St (64-06) bt 64 Av and 67 Av	TC	11	7/30/2020	7/30/2020	0	0	0
207	20-391	163 St (43-28) bt 43 Av and 45 Av	TC	07	7/30/2020	7/30/2020	0	0	0
208	20-394	59 Av (153-10) bt 153 St and Kissena Blvd	TC	07	7/30/2020	7/30/2020	0	0	0
209	20-396	Plainview Av (19-09) bt B 19 St and B 20 St	TC	14	8/5/2020	8/5/2020	0	0	0
210	20-426	109 Ave (174-10) bt 174 St and 175 St	CO	12	8/6/2020	8/6/2020	0	100	0
211	20-438	52 Ct (73-17) bt 73 St and 74 St	TC	05	9/1/2020	9/1/2020	0	0	0
212	20-515	90 Av (148-29) bt 148 St and 149 St	TC	12	9/1/2020	9/1/2020	0	25	0
213	20-530	Van Wyck Expy and Jewel Av	MS	08	11/20/2020	11/20/2020	0	0	200
214	20-534	Archer Av (165-20) bt 165 St and Merrick Blvd	TC	12	9/14/2020	9/14/2020	0	244	0
215	20-536	Fowler Av (131-01) bt Fowler Path and College Point Blvd	TC	07	10/21/2020	10/21/2020	0	260	260
216	20-570	Pinson St (13-83) bt Birdsall Ave and Nameoke Ave	JS	414	11/9/2020	11/9/2020	0	0	0
217	20-574	36 Av (33-12) bt 33 St and 34 St	KB	01	10/16/2020	10/16/2020	0	0	0
218	20-600	Jamaica Av (163-30) bt 163 St and 164 St	TC	12	10/27/2020	10/27/2020	0	0	0
219	20-602	16 Rd (149-46) bt 149 St and 150 St	TC	07	10/30/2020	10/30/2020	0	0	0
220	20-616	Tuckerton St (104-16) bt Liberty Av and Guinzburg Rd	TC	12	11/25/2020	11/25/2020	0	515	0
221	20-617	249 St (142-18) bt Memphis Av and Bend	TC	13	10/30/2020	10/30/2020	0	0	0
222	20-632	231 St (50-40) bt 50 Av and E Hampton Blvd	TC	11	10/19/2020	10/19/2020	0	0	0
223	20-633	B Channel Dr (50-15) bt B 50 St and B 51 St	KB	14	11/24/2020	11/24/2020	0	0	0
224	20-633A	B Channel Dr (50-15) bt B 50 St and B 51 St	KB	14	11/24/2020	11/24/2020	0	0	0
225	20-649	19 Av (149-21) bt 149 St and 150 St	TC	07	11/20/2020	11/20/2020	0	307	0
226	20-652	39 Av (247-31) bt Sand Hill Rd and Little Neck Pkwy	KB	11	12/2/2020	12/2/2020	0	0	0
227	20-654	B 100 St (215) bt Rockaway Beach Blvd and Steeplechase Ct	TC	14	11/24/2020	11/24/2020	0	0	0
228	20-655	67 Av bt 210 St and 211 St	MS	11	11/17/2020	11/17/2020	0	0	320
229	20-664	41 St (18-39) bt Berrian Blvd and 19 Av	TC	01	11/18/2020	11/18/2020	0	235	0
230	20-665	Beverly Rd (8438) bt Lefferts Blvd and Brevoort St	TC	09	11/30/2020	11/30/2020	0	0	0
231	20-669	Chevy Chase St (81-10) bt Tudor Rd and Aberdeen Rd	MS	08	12/2/2020	12/2/2020	0	0	132
232	20-704	Barclay Av (150-15) bt 150 St and Murray St	TC	07	12/9/2020	12/9/2020	0	0	0
233	20-705	Douglaston Pkwy (46-32) bt Alameda Av and Rushmore Av	TC	11	12/21/2020	12/21/2020	0	0	0
234	20-706	124 St (23-53) bt 23 Av and 25 Av	TC	07	11/30/2020	11/30/2020	0	0	0
235	20-707	61 Av (244-55) and N Hills Golf Bndy	TC	11	12/3/2020	12/3/2020	0	0	0
236	20-707A	19 Av (160-51) bt Willets Point Blvd and 163 St	TC	07	12/3/2020	12/3/2020	0	0	0
237	20-709	Northern Blvd (207-26) bt 208 St and 209 St	TC	11	12/9/2020	12/9/2020	0	389	0
238	20-714	57 Av (260-17) bt 260 St and 262 St	TC	11	12/15/2020	12/15/2020	0	0	0
239	20-723	15 E Rd bt Bend and I 678-Flushing Meadows Park-Q099-520M	TC	81	12/16/2020	12/16/2020	0	0	0
240	20-738	243 St (47-43) bt DE and Barrows Ct	TC	11	12/16/2020	12/16/2020	0	0	0
241	20-741	3 St (26-41) bt 26 Av and 27 Av	TC	01	10/20/2020	10/20/2020	58	0	0

Apeendix 2.1.4.1.4: Staten Island

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
242	17-575	Broad St (70) bt Wright St and Quinn St	TC	01	4/24/2020	4/24/2020	0	0	0
243	17-635	Park La (70) bt Oakland Terr and DE	TC	01	4/24/2020	4/24/2020	0	0	0
244	17-770	Fingerboard Rd (819) bt Windermere Rd and Clove Rd	TC	02	4/23/2020	4/23/2020	0	0	0
245	18-420	Richmond Av (2075) bt Rivington Av and Rockland Av	TC	02	1/16/2020	1/16/2020	0	0	0
246	18-420A	Richmond Av (2075) bt Rivington Av and Rockland Av	TC	02	1/16/2020	1/16/2020	0	0	0
247	18-420B	Richmond Av (2075) bt Rivington Av and Rockland Av	TC	02	1/16/2020	1/16/2020	0	0	0
248	18-741	Gordon St (88) bt Purroy Pl and Hudson St	TC	01	4/24/2020	4/24/2020	0	0	0
249	19-057	Crescent Av (140) bt Bismark Av and Jersey St	TC	01	4/24/2020	4/24/2020	0	0	0
250	19-238	Richmond Terr (248) bt Nicholas St and St Peters Pl	TC	01	4/24/2020	4/24/2020	0	0	0
251	19-240	Sharrotts Rd (116) bt Robin Ct and Darnell La	TC	03	4/24/2020	4/24/2020	0	0	0
252	19-517	Grandview Av (36C) bt Richmond Ct and Cowen Pl	TC	01	4/24/2020	4/24/2020	0	0	0
253	19-735	Bay St and Thompson St-New Stapleton Waterfront	KB	01	1/24/2020	1/24/2020	0	0	0
254	19-735B	Bay St and Dock St - New Stapleton Waterfront	KB	01	11/22/2019	2/6/2020	0	0	0
255	19-735C	Bay St and Thompson St- New Stapleton Waterfront	KB	01	11/22/2019	2/6/2020	0	0	0
256	19-787	Harbor View Pl S (3) bt Bay St and Wadsworth Rd	MA	01	1/29/2020	1/29/2020	0	627	0
257	19-790	Park Av (55) bt Church St and Ann St	MA	01	2/27/2020	2/27/2020	0	0	0
258	19-791	Ely Av bt Bennett Av and Downes Av	MA	03	1/23/2020	1/23/2020	0	192	0
259	20-040	Hamden Av (216) bt Husson St and Hylan Blvd	MA	02	2/13/2020	2/13/2020	0	0	0
260	20-050	Hudson St (18) bt Cedar St and Gray St	MA	01	3/2/2020	3/2/2020	0	0	0
261	20-060	New Dorp Ln (465) bt Miller Field Bndy and Sanchez Dr - New Dorp I	TC	02	2/24/2020	2/24/2020	0	0	0
262	20-072	Luten Av (100) bt Deisius St and Eylandt St	TC	03	2/24/2020	2/24/2020	0	0	0
263	20-102	Faber St (54) bt Larkin St and Grove Av	CO	01	3/31/2020	3/31/2020	0	700	0
264	20-109	Bloomingdale Rd (449) bt Mandy Ct and Marvin Rd	CO	03	3/31/2020	3/31/2020	0	300	0
265	20-130	Vulcan St (61) bt Olympia Blvd and Patterson Av	MA	02	3/2/2020	3/2/2020	0	547	0
266	20-175	Prospect St (10) bt Front St and Staten Island Railway Line	TC	01	3/16/2020	3/16/2020	0	337	0
267	20-186	Quinlan Av (37) bt Victory Blvd and Purdy Av	TC	01	3/12/2020	3/12/2020	0	0	0
268	20-222	Arthur Kill Rd (2790) bt Grille Ct and Chemical Ln	JS	03	8/4/2020	8/4/2020	0	0	0
269	20-241	Vicinity of Shore Acres Rd	SA		5/21/2020	6/18/2020	0	0	0
270	20-268	Annadale Rd (683) bt Rye Av and Arden Av	LJ	03	5/15/2020	5/15/2020	0	139	0
271	20-274	Middle Loop Rd (96) bt Armstrong Ave and Cortelyou Ave	JS	03	5/26/2020	5/26/2020	0	0	0
272	20-289	Fairbanks Av and Platt St	JS	03	8/4/2020	-	0	0	0
273	20-320	Rhine Av and Dekalb St	TC	01	7/1/2020	7/1/2020	0	362	0
274	20-323	Wilder Av bt Morton St and Richmond Rd	JS	03	8/4/2020	-	0	0	0
275	20-324	Clove Rd bt W Fingerboard and Whitney Av and Leslie Av	JS	02	6/17/2020	8/4/2020	0	0	0
276	20-328	Burden Av (149) bt LaForge Pl and DE	TC	01	7/1/2020	7/1/2020	0	25	0
277	20-359	Brielle Ave (475) bt Rockland Ave and Friendship Ln	JS	02	6/9/2020	7/2/2020	0	0	0
278	20-360	Hillcrest Ter (130) bt Clove Rd and Hillcrest Ct	CO	02	7/2/2020	7/2/2020	0	0	500
279	20-413	Pacific Av (11) bt Hylan Blvd and Beach Rd	TL	03	8/19/2020	8/19/2020	0	0	0
280	20-421	Arden Av (543) bt Sinclair Av and Sheldon Av-Sanitary	TC	03	7/27/2020	7/27/2020	0	206	0
281	20-421A	Arden Av (543) bt Sinclair Av and Sheldon Av-Storm	TC	03	7/27/2020	7/27/2020	0	41	0
282	20-535	Gordon St (14) bt DE and Grove St	KB	01	9/29/2020	9/29/2020	0	0	0
283	20-541	St Marks Pl (205) bt Bend and Hamilton Av	TC	01	9/17/2020	9/17/2020	0	244	0
284	20-554	Creston Pl (37) bt Bend and DE	KB	01	11/13/2020	11/13/2020	0	0	0
285	20-563	Hopkins Av (92) bt Twombly Av and O'Gorman Av	KB	03	10/6/2020	10/6/2020	0	417	0
286	20-571	Aviston St (134) bt Amherst Av and Riga St	KB	03	10/6/2020	10/6/2020	0	222	0
287	20-639	Simonson Av (124) bt NYCTA Subway and Heusden St	KB	01	11/6/2020	11/6/2020	0	224	0
288	20-663	Mountainview Av (48) bt Victory Blvd and Purdy Av	KB	01	11/25/2020	11/25/2020	0	0	0
289	20-668	Vulcan St (1) bt Nugent Av and Olympia Blvd	KB	02	12/1/2020	12/1/2020	0	0	0

Apeendix 2.1.4.1.5: The Bronx

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
290	17-752	UnderCliff Av (1725) bt W 176 St and Sedgwick Av	TC	05	1/7/2020	1/7/2020	0	0	0
291	18-024	Spencer Av (6031) bt DE and W 261 St	TC	08	1/7/2020	1/7/2020	0	0	0
292	18-447	Bruckner Blvd (2505) bt Bruckner Exp Et 6 B WB and Hutchinson RV	KB	10	1/25/2020	1/25/2020	0	0	0
293	19-248	Whitlock Av bt E 165 St and Aldus St	TC	02	1/21/2020	1/21/2020	0	0	0
294	19-308	E 241 St (714) bt Cranford Av and Furman Av	TC	12	4/7/2020	4/7/2020	0	108	0
295	19-708	E (261) 206 St bt Rochambeau Av and Bainbridge Av	RF	07	10/27/2019	1/22/2020	0	0	0
296	19-806	Dawson St (915) bt Rogers Pl and Intervale Av	RF	02	1/22/2020	1/22/2020	0	0	0
297	19-813	Jackson Av (603) bt Pontiac Pl and E 151 St	RF	01	1/7/2020	1/7/2020	0	0	0
298	20-023	Boston Rd (2082) bt E 179 St and E 180 St	TC	06	2/7/2020	2/7/2020	0	0	0
299	20-062	Webster Av (3050) bt E Mosholu Pkwy N and E 202 St - PS 20	TC	07	2/11/2020	2/11/2020	0	0	0
300	20-063	White Plains Rd (456) bt Patterson Av and Lacombe Av	TL	09	2/13/2020	2/13/2020	0	0	0
301	20-064	E Tremont Av (3000) bt Tan Pl and Hutchinson Rvr Py Sb Westche	TC	10	2/13/2020	2/13/2020	0	0	0
302	20-065	Terrace View Av (99) bt Adrian Av and Teunissen Pl - JFK HS	TC	08	2/11/2020	2/11/2020	0	0	0
303	20-066	Westchester Av (2697) bt Waters Av and Hutchinson Rvr Py Sb West	TC	11	2/13/2020	2/13/2020	0	0	0
304	20-090	W 247 St (613) bt Alderbrook Rd and Arlington Av	CO	08	3/19/2020	3/31/2020	0	450	0
305	20-091	Olinville Av (2523) bt Mace Av and Allerton Av	TC	11	2/28/2020	2/28/2020	0	303	0
306	20-099	Mcowen Av (3544) bt Hollers Av and Bend	TC	12	3/3/2020	3/3/2020	0	545	0
307	20-118	E 218 St (842) bt Barnes Av and Bronxwood Av	KB	12	3/3/2020	3/3/2020	0	0	0
308	20-142	Harper Av (3947) bt E 233 St and Borough Bndy	TC	12	3/3/2020	3/3/2020	0	0	0
309	20-189	E 206 St (261) bt Rochambeau Av and Bainbridge Av	KB	07	7/29/2020	7/29/2020	0	0	0
310	20-191	Lincoln Av (101) bt E 132 St and Bruckner Blvd	TC	01	3/14/2020	3/14/2020	0	330	0
311	20-202	E 16 St (204) bt Jerome Av and Villa Av	KB	07	3/27/2020	3/27/2020	0	0	0
312	20-203	Jackson Av (603) bt Pontiac Pl and E 151 St	KB	01	5/5/2020	5/5/2020	0	0	0
313	20-206	E Gun Hill Rd (881) bt Barnes Av and Bronxwood Av	TC	12	4/30/2020	4/30/2020	0	0	0
314	20-223	Siegfried Pl (1339) bt DE and Valhalla Dr	TC	10	6/3/2020	6/3/2020	0	535	0
315	20-247	Leggett Av (1080) bt Garrison Av and Barry St	TC	02	4/30/2020	4/30/2020	0	0	0
316	20-280	Jerome Ave (2501) bt E 190 St and W 192 St	JS	07	5/26/2020	5/26/2020	0	0	0
317	20-288	Anthony Av (2075) bt E Burnside Av and E 180 St	TC	05	6/9/2020	6/9/2020	0	459	0
318	20-318	3 Av (2447) bt E 134 St and E 135 St	TC	01	6/30/2020	6/30/2020	0	0	0
319	20-393	Grosvenor Av (5310) bt Bend and Iselin Av	TC	08	8/4/2020	8/4/2020	0	0	0
320	20-395	Bridge Replacement of E 138 St over Major Deegan-D037941-01	TC	01	7/20/2020	7/20/2020	0	0	0
321	20-437	E 214 St (738) bt Holland Av and Barnes Av	TC	12	9/29/2020	9/29/2020	0	0	0
322	20-512	Tiemann Av bt Allerton Av and E Gun Hill Rd -PDX-005-20	TC	11	9/3/2020	9/3/2020	0	216	0
323	20-539	E (180) 132 St bt Lincoln Av and Alexander Av	KB	01	10/9/2020	10/9/2020	0	164	0
324	20-540	E 149 St (567) bt Brooks Av and Anns Av	TC	01	9/21/2020	9/21/2020	0	0	0
325	20-557	3 Av (2455) bt E 134 St and E 135 St	TC	01	9/30/2020	9/30/2020	0	0	0
326	20-560	E 236 St (711) bt White Plains Rd and Furman Av-NYSDOT Pin X110	TC	12	10/22/2020	10/22/2020	0	0	0
327	20-564	Macombs Rd (1504-1518) bt Cromwell Av and Goble Pl	KB	04	10/20/2020	10/20/2020	0	857	0
328	20-572	Fieldston Rd (5437) bt Henry Hudson Py SB En Fields and Bend	KB	08	11/18/2020	11/18/2020	0	15	0
329	20-594	Bruner Av and Ely Av	PR		10/14/2020	10/27/2020	0	521	0
330	20-656	Park Av (3500) bt E 167 St and E 168 ST	TC	03	12/1/2020	12/1/2020	0	0	0
331	20-702	Watson Av (1484) bt Evergreen Av and Wheeler Av	TC	09	12/1/2020	12/1/2020	0	0	0
332	20-703	Webster Av (2302) bt E 183 St and E 184 St	TC	06	12/1/2020	12/1/2020	0	0	0
333	20-708	Hollers Av (2566) bt Ropes Av and Pelham Bay Park W	TC	12	12/15/2020	12/15/2020	0	0	0
334	20-710	Siegfried Pl (1339) bt DE and Valhalla Dr	TC	10	12/10/2020	12/10/2020	0	168	0

2020 In-House Survey Total, LF:	38,089	(7.21 mi)	1/2/2020	12/31/2020	1,283	31,717	5,089
Operating Expenses, $						

* No footage indicates investigation where inspection of sewers was not required or completed

Appendix 2.1.4.2: Citywide

Apeendix 2.1.4.2.1: Brooklyn

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
335	15-857	E 80 St (925) bt Flatlands Av and Av J	MA	18	4/30/2020	4/30/2020	670	0	0
336	18-154	Evergreen Ave (345)	EV	04	1/23/2020	1/24/2020	1,154	0	0
337	18-156	2 St (112)	EV	06	1/22/2020	1/22/2020	597	0	0
338	18-200	Preston Ct (5814) bt E 56 St and E 80 St	RF	18	5/11/2020	-	0	0	0
339	18-216	Brighton 4 Rd and Brighton 4 St	NH	13	6/4/2020	6/9/2020	1,350	0	0
340	18-220	Ocean Pkwy (269)	JB	12	2/21/2020	2/24/2020	0	0	0
			PR	12	2/21/2020	2/24/2020	752	0	0
341	18-244	McDonald Av (422) bt Albemarle Rd and Church Av	AB	12	1/15/2020	1/17/2020	1,626	0	0
342	18-246	Av P (1610) bt E 16 St and E 17 St	CO	15	12/10/2019	-	276	0	0
343	18-253	Stillwell Av bt 27 Av and Bay 46 St	MA	13	5/15/2020	5/19/2020	1,089	0	0
344	18-280	7 Av (9216) bt 92 St and Bend	DC	10	4/22/2020	4/29/2020	189	0	0
			MA	10	4/22/2020	4/29/2020	1,747	0	0
			SA	10	4/22/2020	4/29/2020	440	0	0
345	18-294	Berriman St (153) bt Glenmore Av and Pitkin Av	CO	05	1/20/2020	1/24/2020	651	0	0
			JB	05	1/20/2020	1/24/2020	406	0	0
346	18-324	56 St (732) bt 7 Av and 8 Av	CO	07	1/31/2020	2/3/2020	745	0	0
347	18-402	Ten Eyck St (10) bt Union Av and Lorimer St	CO	01	8/19/2020	8/19/2020	625	0	0
348	18-460	Ocean Av (2055) bt Avenue O and Avenue P	EV	14	6/25/2020	11/23/2020	179	0	0
			KB	14	6/25/2020	11/23/2020	587	0	0
			MA	14	6/25/2020	11/23/2020	2,154	0	0
349	18-513	39 St (412) bt 4 Av and 5 Av	EV	07	2/24/2020	2/24/2020	740	0	0
350	18-536	6 Av (7308) bt 72 St and 73 St	DC	10	2/10/2020	2/12/2020	0	0	0
			FM	10	2/10/2020	2/12/2020	564	0	0
351	18-557	E 100 St (1058) bt Av J and Av K	MA	18	11/27/2020	11/27/2020	959	0	0
352	18-577	4 Av (778) bt 26 St and 27 St	DC	07	3/19/2020	3/20/2020	216	0	0
353	18-688	Blake Av and Rockaway Av	DC	16	5/4/2020	5/6/2020	82	0	0
			MA	16	5/4/2020	5/6/2020	583	0	0
354	18-691	12 St (145) bt 2 Av and 3 Av	EV	06	2/25/2020	2/26/2020	910	0	0
355	18-720	Cortelyou Rd (913) bt E 9 St and Coney Island Av	CO	12	3/17/2020	3/19/2020	718	0	0
			DC	12	3/17/2020	3/19/2020	0	0	0
356	18-726	Watkins St bt Riverdale Av and Newport St	CO	16	5/27/2020	5/27/2020	566	0	0
357	18-733	Coney Island Av (1380) bt Av J and Av K	RF	12	4/13/2020	4/15/2020	820	0	0
			NH	12	4/13/2020	4/15/2020	45	0	0
358	18-772	Atlantic Av (2815) bt Hendrix St and Schenck Av	MA	05	10/23/2020	10/23/2020	264	0	0
359	18-775	5 Av (7501) bt Bay Ridge Pkwy and 76 St	MA	10	5/21/2020	5/22/2020	611	0	0
360	18-783	18 Av (8601) bt 86 St and Benson Av	RF	11	6/1/2020	6/3/2020	230	0	0
			NH	11	6/1/2020	6/3/2020	879	0	0
361	18-823	Rutland Rd (999A) bt E 93 St and E 94 St	JB	17	2/24/2020	2/25/2020	977	0	0
362	18-879	Av N and Veterans Av	KB	18	7/1/2020	-	433	0	0
			RF	18	7/1/2020	-	641	0	0
			SA	18	7/1/2020	-	466	0	0
363	18-882	Schenck Av bt Livonia Av and New Lots Av	JS	05	3/20/2020	3/20/2020	382	0	0
364	18-894	Bay Pkwy (8404) bt 84 St and 85 St	AB	11	1/14/2020	1/15/2020	1,050	0	0
365	19-021	Crescent St bt Fulton St and Atlantic Av	MA	05	6/12/2020	6/15/2020	1,039	0	0
366	19-083	Butler St (186) bt Nevins St and Bond St	EV	06	2/21/2020	-	486	0	0
367	19-086	Flatbush Av (2301) bt Av S and Fillmore Av	SA	18	5/28/2020	5/29/2020	1,027	0	0
368	19-087	St Marks Av (1218) bt Utica Av and Rochester Av	EV	08	1/30/2020	1/31/2020	1,052	0	0
369	19-107	8 Av and 44 St	JS	07	8/10/2020	8/11/2020	288	0	0
			MA	07	8/10/2020	8/11/2020	489	0	0
370	19-131	Sutter Av bt Barbey St and Jerome St	EV	05	3/11/2020	3/11/2020	226	0	0
371	19-148	Ralph Av (65) bt Monroe St and Madison St	MA	03	4/23/2020	6/12/2020	358	0	0
			RF	03	4/23/2020	6/12/2020	261	0	0
			SA	03	4/23/2020	6/12/2020	432	0	0
372	19-149	W 24 St (2970) bt Mermaid Av and Surf Av	DC	13	4/24/2020	-	467	0	0
373	19-154	E 84 St (1031) bt Av J and Church La	EV	18	2/3/2020	2/4/2020	1,438	0	0
374	19-183	Autumn Av (294) bt Fulton St and Atlantic Av	DC	05	1/29/2020	1/30/2020	487	0	0
			PR	05	1/29/2020	1/30/2020	653	0	0
375	19-200	18 Av (4504) bt 45 St and 46 St	RF	12	4/16/2020	4/20/2020	856	0	0
376	19-210	Nostrand Av (952) bt Crown St and Montgomery	RF	09	3/27/2020	-	351	0	0
377	19-253	3 Ave (7316) bt 73 St and 74 St	JS	10	1/20/2020	1/21/2020	853	0	0
			SA	10	1/20/2020	1/21/2020	249	0	0
378	19-254	Bay 37 St (22) bt 86 St and Benson Ave	AB	11	1/10/2020	1/13/2020	649	0	0
379	19-274	86 St (1525) bt 15 Av and Bay 10 St	AB	11	1/13/2020	1/14/2020	726	0	0
380	19-275	Albemarle Rd (1215) bt Westminister Rd and Argyle Rd	AB	14	2/4/2020	2/5/2020	39	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
381	19-276	Brighton 11 St (120) bt Ocean View Av and Brighton B Av	DC	13	5/6/2020	5/8/2020	618	0	0
382	19-277	Essex St (272) bt Atlantic Av and Liberty Av	DC	05	3/20/2020	-	0	0	0
383	19-279	Av M (2115) bt E 21 St and E 22 St	EV	14	2/27/2020	2/27/2020	243	0	0
384	19-280	Bay Pkwy (8655) bt 86 St and Benson Av	AB	11	2/5/2020	2/7/2020	737	0	0
385	19-281	Sunnyside Av (207) bt Barbey St and Sunnyside Ct	NH	05	6/10/2020	6/10/2020	382	0	0
386	19-284	Kent St (148) bt Franklin St and Manhattan Av	MA	01	5/5/2020	5/6/2020	934	0	0
387	19-285	5 Av (285) bt 1 St and 2 St	DC	06	3/19/2020	3/19/2020	215	0	0
388	19-286	Humboldt St (661) bt Driggs Av and Nassau Av	CO	01	1/30/2020	1/31/2020	424	0	0
			DC	01	1/30/2020	1/31/2020	493	0	0
389	19-287	E 7 St (2478) bt Dunne Ct and Av Y	CO	15	5/18/2020	5/26/2020	211	0	0
			JP	15	5/18/2020	5/26/2020	789	0	0
			NH	15	5/18/2020	5/26/2020	988	0	0
390	19-344	Park Av and Tompkins Av	JS	03	5/12/2020	8/13/2020	75	0	0
			MA	03	5/12/2020	8/13/2020	1,108	0	0
			RF	03	5/12/2020	8/13/2020	927	0	0
			NH	03	5/12/2020	8/13/2020	866	0	0
391	19-376	Stillwell Av (2331) bt Av W and Av X	AB	13	1/2/2020	1/6/2020	468	0	0
			JB	13	1/2/2020	1/6/2020	1,237	0	0
392	19-377	39 St (1550) bt 15 Av and 16 Av	AB	12	1/8/2020	1/9/2020	838	0	0
393	19-404	E 23 St (754) bt Campus Rd and Campus Rd	AB	14	1/2/2020	1/7/2020	257	0	0
			JL	14	1/2/2020	1/7/2020	258	0	0
			JP	14	1/2/2020	1/7/2020	635	0	0
394	19-421	Dean St (1501) bt Albany Av and Troy Av	EV	08	2/10/2020	2/10/2020	733	0	0
395	19-427	E 19 St and Newkirk Av	EV	14	2/5/2020	2/7/2020	1,216	0	0
396	19-462	Hewes St (272) bt Marcy Av and Harrison Av	EV	01	3/9/2020	3/9/2020	619	0	0
397	19-538	Fillmore Av (3317) bt E 33 St and E 34 St	AB	18	2/7/2020	2/7/2020	542	0	0
398	19-539	Av D (9601) bt E 96 St and Rockaway Pkwy	RF	18	4/9/2020	4/9/2020	553	0	0
399	19-541	Belmont Av (695) bt Ashford St and Cleveland St	EV	05	2/27/2020	2/27/2020	225	0	0
400	19-543	4 Av bt 41 St and 42 St	JB	07	1/9/2020	1/9/2020	325	0	0
401	19-544	4 Av (516) bt 13 St and 14 St	JB	06	1/8/2020	1/8/2020	236	0	0
402	19-573	4 Ave (6818) bt Bay Ridge Ave and 68 St	AB	10	1/17/2020	1/20/2020	238	0	0
			SA	10	1/17/2020	1/20/2020	419	0	0
403	19-585	E 96 St (409) bt Lenox Rd and Willmohr St	EV	17	1/29/2020	1/29/2020	691	0	0
404	19-586	Jefferson Av bt Marcus Garvey Blvd and Lewis Av	MA	03	7/22/2020	7/23/2020	523	0	0
405	19-587	Av B (9521) bt E 95 St and E 96 St	AB	17	1/8/2020	1/8/2020	320	0	0
406	19-606	85 St (2376) bt 23 Av and 24 Av	AB	11	1/9/2020	-	0	0	0
407	19-607	Ocean Av (2350) bt Av R and Av S	CO	15	4/9/2020	4/10/2020	0	0	0
			MA	15	4/9/2020	4/10/2020	792	0	0
408	19-608	Macon St (346) bt Marcus Garvey Blvd and Lewis Av	DC	3	2/18/2020	2/19/2020	784	0	0
409	19-609	Stanhope St (235) bt Knickerbocker Av and Irving Av	EV	04	1/28/2020	1/28/2020	700	0	0
410	19-611	W 8 St (1515) bt Av O and Av P	DC	11	2/20/2020	2/20/2020	780	0	0
411	19-613	Miller Av (446) bt Sutter Av and Blake Av	EV	05	9/2/2020	9/15/2020	135	0	0
			MA	05	9/2/2020	9/15/2020	990	0	0
			PR	05	9/2/2020	9/15/2020	0	0	0
412	19-614	E 26 St (1064) bt Av J and Av K	DC	14	4/21/2020	4/22/2020	0	0	0
			JS	14	4/21/2020	4/22/2020	963	0	0
413	19-616	Logan St (411) bt Liberty Av and Glenmore Av	EV	05	2/28/2020	3/5/2020	1,808	0	0
414	19-617	Av M (2706) bt E 27 St and E 28 St	RF	14	4/20/2020	4/20/2020	259	0	0
415	19-618	Ditmas Av bt Argyle Rd and Rugby Rd	DC	14	4/24/2020	4/27/2020	143	0	0
416	19-619	Av J (9613) bt E 96 St and Rockaway Pkwy	MA	18	5/4/2020	5/5/2020	632	0	0
417	19-649	Hicks St and State St	RF	02	6/29/2020	7/1/2020	985	0	0
418	19-650	Dean St (345) bt 3 Av and 4 Av	RF	02	3/24/2020	3/26/2020	808	0	0
419	19-659	Miller Av (397) bt Belmont Av and Sutter Av	CO	05	3/20/2020	4/8/2020	131	0	0
			DC	05	3/20/2020	4/8/2020	0	0	0
			JP	05	3/20/2020	4/8/2020	455	0	0
			JS	05	3/20/2020	4/8/2020	110	0	0
			PR	05	3/20/2020	4/8/2020	0	0	0
			DP	05	3/20/2020	4/8/2020	0	0	0
420	19-660	Hinsdale St (670) bt New Lots Av and Linden Blvd	EV	05	2/11/2020	2/11/2020	741	0	0
421	19-671	15 Av (80-14) bt 80 St and 81 St	JS	11	3/23/2020	-	479	0	0
422	19-699	Flatbush Av (1324) bt Foster Av and E 26 St	MA	14	7/23/2020	-	1,030	0	0
423	19-721	Glenmore Av (666) bt Ashford St and Warwick St	EV	05	1/31/2020	2/3/2020	848	0	0
424	19-762	3 St (214) bt Body of Water and 3 Av	MA	06	10/14/2020	10/14/2020	508	0	0
425	20-008	50 St (1876) bt LIRR Bay Ridge Line and 19 Av	EV	12	1/27/2020	1/27/2020	370	0	0
426	20-010	Fort Hamilton Pkwy (4420) bt New Utrecht Av and 45 St	MA	12	7/14/2020	8/3/2020	0	0	0
			MA		7/9/2020	8/3/2020	495	0	0
			SA	12	7/9/2020	8/3/2020	0	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
427	20-016	92 St Deep Manhole Reinspections Locations in Brooklyn	EC		6/9/2020	6/10/2020	0	0	0
			EV		1/22/2020	43886	0	0	0
			KB		1/22/2020	43886	0	0	0
			KB		6/9/2020	43992	0	0	0
			TC		6/9/2020	6/10/2020	0	0	0
428	20-031	Hancock St (458) bt Lewis Av and Marcus Garvey Blvd	EV	03	2/18/2020	2/19/2020	1,002	0	0
429	20-032	Broadway (143) bt Driggs Av and Bedford Av	MA	0	5/6/2020	43958	598	0	0
430	20-033	Dean St (172) bt Hoyt St and Bond St	NH	02	3/17/2020	43909	1,447	0	0
431	20-053	Clymer St (185) bt Bedford Av and Bend	FM	01	2/10/2020	43871	510	0	0
432	20-054	Ocean Pkwy (1543) bt Av O and Av P	MA	12	5/20/2020	43972	375	0	0
433	20-087	40 St (1430) bt 14 Av and 15 Av	EV	12	3/10/2020	43901	0	0	0
434	20-122	45 St (961) bt 9 Av and 10 Av	MA	12	5/13/2020	5/15/2020	637	0	0
435	20-124	50 St (1758) bt Old New Utrecht Rd and 18 Av	EV	12	3/10/2020	43900	428	0	0
436	20-145	60 St bt 4 Av and 5 Av	NH	07	6/24/2020	6/25/2020	724	0	0
437	20-153	2 Av bt 42 St and 43 St	NH	07	6/25/2020	6/26/2020	566	0	0
438	20-155	E 68 St (2117) bt Av U and E Mill Basin Shoreline	EV	18	3/9/2020	3/9/2020	270	0	0
439	20-163	E 57 St (1079) bt Av J and Av K	EV	18	3/5/2020	3/6/2020	796	0	0
440	20-166	E 3 St (2354) bt Av X and Av W	MA	15	5/28/2020	6/4/2020	813	0	0
441	20-167	Fulton St (1303) bt Nostrand Av and Verona Pl	RF	03	4/21/2020	4/22/2020	703	0	0
442	20-170	Cropsey Av (3081) bt Hart Pl and Neptune Av (Bend)	CO	13	5/26/2020	5/27/2020	684	0	0
443	20-171	Tompkins Av and Myrtle Av	MA	03	6/18/2020	8/7/2020	1,257	0	0
444	20-172	Ocean pkwy (2601) bt Av Z and Murdock Ct	MA	13	11/3/2020	11/5/2020	795	0	0
445	20-173	Riverdale Av bt Junius St and Powell St	CO	16	4/8/2020	4/9/2020	217	0	0
			PR	16	4/8/2020	4/9/2020	842	0	0
446	20-198	Ocean View Av (229) bt Brighton 2 St and Brighton 3 St	RF	13	4/9/2020	4/16/2020	1,259	0	0
			NH	13	4/9/2020	4/16/2020	263	0	0
447	20-261	6 Av (6804) bt Bay Ridge Av and 68 St	PR	10	4/28/2020	4/28/2020	267	0	0
448	20-263	Schermerhorn St (285) bt Bond St and Nevins St	DC	02	4/29/2020	5/1/2020	627	0	0
			RF	02	4/29/2020	5/1/2020	312	0	0
			SA	02	4/29/2020	5/1/2020	412	0	0
449	20-271	Lee Ave (236) bt Lynch St and Middleton St	RF	01	5/29/2020	6/1/2020	392	0	0
			SA	01	5/29/2020	6/1/2020	429	0	0
450	20-290	Lincoln Rd (105) bt Flatbush Av and Bedford Av	MA	09	6/23/2020	6/23/2020	1,005	0	0
451	20-306	Hopkinson Av (20) bt Macon St and MacDonough St	SA	16	6/12/2020	6/15/2020	217	0	0
452	20-307	49 St (525) bt 5 Av and 6 Av	PR	07	6/15/2020	6/16/2020	787	0	0
			SA	07	6/15/2020	43998	0	0	0
453	20-308	Dean St (374) bt 4 Av and 5 Av	SA	06	6/22/2020	44004	714	0	0
454	20-311	Shore Pkwy (1739) bt 24 Av and Bay 37 St	MA	11	6/24/2020	44006	416	0	0
455	20-312	E 95 St (896) bt Nolans Ln and Foster Av	PR	18	6/16/2020	43999	701	0	0
456	20-313	Seaview Av (10124) bt E 101 St and E 102 St	CO	18	6/18/2020	44006	1,280	0	0
			SA	18	6/18/2020	44006	620	0	0
457	20-317	Grand St bt Lorimer St and Leonard St	KB	01	7/17/2020	7/17/2020	450	0	0
458	20-325	Kingston Av (273) bt St Johns Pl and Lincoln Pl	MA	08	12/7/2020	12/8/2020	987	0	0
459	20-363	Ditmas Av and E 17 St	EV	14	7/8/2020	44022	801	0	0
			JS	14	7/8/2020	44022	711	0	0
			MA	14	7/8/2020	44022	464	0	0
			SA	14	7/8/2020	44022	398	0	0
460	20-373	Mermaid Av and W 15 St - Conisph3a	CO	13	8/20/2020	8/26/2020	792	0	0
			SA	13	8/20/2020	8/26/2020	1,421	0	0
461	20-374	Av M bt E 87 St and E 86 St	CO	18	7/12/2020	12/4/2020	0	0	0
			DC	18	7/12/2020	12/4/2020	0	0	0
			EV	18	7/12/2020	12/4/2020	0	0	0
			JL	18	7/12/2020	12/4/2020	0	0	0
			JP	18	7/12/2020	12/4/2020	0	0	0
			JS	18	7/12/2020	12/4/2020	0	0	0
			MA	18	7/12/2020	12/4/2020	0	0	0
			PR	18	7/12/2020	12/4/2020	0	0	0
			RF	18	7/12/2020	12/4/2020	0	0	0
			SA	18	7/12/2020	12/4/2020	0	0	0
			TC	18	7/12/2020	12/4/2020	0	0	0
			ZS	18	7/12/2020	12/4/2020	0	0	0
			TB	18	7/12/2020	12/4/2020	0	0	0
462	20-380	Madison St (1079) bt Evergreen Av and Central Av	KB	04	7/17/2020	7/21/2020	265	0	0
			MA	04	7/17/2020	7/21/2020	400	0	0
463	20-399	S 2 St (408) bt Hooper St and Hewes St	EV	01	10/13/2020	10/13/2020	442	0	0
464	20-402	6 St (288) bt 4 Av and 5 Av	MA	06	7/23/2020	7/27/2020	730	0	0
			NA	06	7/23/2020	7/27/2020	0	0	0
465	20-420	Plymouth St bt Pearl St and Jay St	CO	02	8/27/2020	9/23/2020	127	0	0
			MA	02	8/27/2020	9/23/2020	22	0	0
			PR	02	8/27/2020	9/23/2020	0	0	0
			SA	02	8/27/2020	9/23/2020	102	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
466	20-424	S 5 St (404) bt Hooper St and Hewes St	CO	01	8/18/2020	8/18/2020	867	0	0
467	20-430	Riverdale Av and Bristol St	EV	16	8/5/2020	8/10/2020	1,110	0	0
			MA	16	8/5/2020	8/10/2020	36	0	0
468	20-446	Dennett Pl (8) bt Luquer St and Nelson St	EV	06	10/8/2020	10/8/2020	216	0	0
469	20-453	E 32 St (382) bt Clarendon Rd and Av D	MA	17	10/1/2020	10/2/2020	305	0	0
			RF	17	10/1/2020	10/2/2020	503	0	0
470	20-459	St Francis Pl (12) bt St Johns Pl and Lincoln Pl	PR	08	8/31/2020	9/1/2020	282	0	0
471	20-467	Plymouth St and Adams St	CO		8/21/2020	8/21/2020	64	0	0
472	20-471	Putman Av (457) bt Tompkins Av and Throop Av	MA	03	8/27/2020	9/2/2020	815	0	0
473	20-485	Av I bt E 45 St and Troy Av	EV	18	10/5/2020	10/9/2020	267	0	0
			EV		10/6/2020	10/6/2020	0	0	0
			MA	18	10/5/2020	10/9/2020	791	0	0
474	20-487	Av T and W 5 St	EV	11	8/28/2020	9/2/2020	207	0	0
			PR	11	9/2/2020	9/4/2020	21	0	0
			PR		8/28/2020	9/2/2020	1,040	0	0
			PRA	11	9/2/2020	9/4/2020	686	0	0
475	20-489	Junius St and Lott Av	EV	16	10/2/2020	-	113	0	0
			MA	16	10/2/2020	-	706	0	0
476	20-490	New Lots Av (775) bt Cleveland St and Elton St	MA	05	9/30/2020	-	0	0	0
			RF	05	9/30/2020	-	230	0	0
477	20-491	Fulton St (3443) bt Nichols Av and Grant Av	MA	05	10/22/2020	10/22/2020	299	0	0
478	20-492	E 3 St (2196) bt Av U and Av V	EV	15	9/29/2020	10/13/2020	1,543	0	0
479	20-493	Miller Av (557) bt Dumont Av and Livonia Av	EV	05	9/11/2020	9/15/2020	277	0	0
			MA	05	9/11/2020	9/15/2020	294	0	0
			PR	05	9/11/2020	9/15/2020	0	0	0
480	20-494	Flatbush Av (934) bt Church Av and Snyder Av	MA	14	8/31/2020	9/1/2020	1,330	0	0
481	20-497	E 46 St (1420) bt Av J and Av K	MA	18	9/29/2020	-	362	0	0
482	20-498	Autumn Av (122) bt Etna St and Danforth St	PR	05	9/1/2020	9/1/2020	78	0	0
483	20-501	Logan St (498) bt Pitkin Av and Belmont Av	MA	05	9/3/2020	9/4/2020	118	0	0
			PR	05	9/3/2020	9/4/2020	357	0	0
484	20-503	Chestnut St (402) bt Liberty Av and Glenmore Av	MA	05	9/2/2020	9/2/2020	470	0	0
485	20-507	New York Av bt Av H and Glenwood Rd	MA	17	9/10/2020	9/10/2020	854	0	0
486	20-508	Weldon St (65) bt Euclid Av and Crescent St	MA	05	9/4/2020	9/4/2020	562	0	0
487	20-518	73 St (460) bt 4 Av and 5 Av	MA	10	9/22/2020	9/22/2020	765	0	0
488	20-519	W 12 St (1541) bt Bay Pkwy and Av P	DC	11	9/21/2020	9/22/2020	190	0	0
			MA	11	9/21/2020	9/22/2020	283	0	0
489	20-520	Coney Island Av (1049) bt Foster Av and Glenwood Rd	MA	14	9/28/2020	9/29/2020	339	0	0
			NH	14	9/28/2020	9/29/2020	150	0	0
490	20-521	E 96 St (1346) bt Holmes Ln and Av L	EV	18	9/11/2020	9/15/2020	620	0	0
			MA	18	9/11/2020	9/15/2020	609	0	0
			PR	18	9/11/2020	9/15/2020	238	0	0
491	20-522	E 59 St bt Av M and Av N	MA	18	9/24/2020	10/28/2020	617	0	0
			SA	18	9/24/2020	10/28/2020	0	0	0
492	20-523	Linwood St bt Hegeman Av and New Lots Av	MA	05	9/18/2020	9/18/2020	829	0	0
493	20-525	Euclid Av (104) bt Etna St and Ridgewood Av	MA	05	9/16/2020	9/16/2020	577	0	0
494	20-527	E 99 St (726) bt Glenwood Rd and Conklin Av	MA	18	9/16/2020	9/17/2020	348	0	0
495	20-528	Evergreen Av (551) bt Jefferson Av and Hancock St	MA	04	9/17/2020	9/18/2020	889	0	0
496	20-529	E 53 St (1306) bt Flatlands Av and Av K	MA	18	9/15/2020	9/16/2020	336	0	0
			PR	18	9/15/2020	9/16/2020	347	0	0
497	20-547	E 54 St (2001) bt Av T and Av U	MA	18	9/25/2020	10/1/2020	874	0	0
			RF	18	9/25/2020	10/1/2020	40	0	0
			SA	18	9/25/2020	10/1/2020	780	0	0
			NH	18	9/25/2020	10/1/2020	0	0	0
498	20-568	E 89 St (742) bt Glenwood Rd and Flatlands Ave	MA	318	12/8/2020	12/9/2020	627	0	0
499	20-575	15 Av (4302) bt 43 St and 44 St	EV	12	10/8/2020	10/9/2020	748	0	0
500	20-583	Sheffield Av and Livonia Av	DC	05	10/28/2020	11/2/2020	740	0	0
			MA	05	10/28/2020	11/2/2020	692	0	0
501	20-584	Av M (2415) bt E 24 St and Bedford Av	MA	14	12/1/2020	12/1/2020	249	0	0
502	20-585	E 23 St (1422) bt Av N and Olean St	SA	14	10/23/2020	10/23/2020	824	0	0
503	20-586	66 St (1649) bt Cameron Ct and Wallaston Ct	SA	11	10/22/2020	10/22/2020	746	0	0
504	20-587	Dumont Av (300) bt Rockaway Av and Osborn St	DC	16	10/26/2020	10/29/2020	110	0	0
			MA	16	10/26/2020	10/29/2020	1,168	0	0
505	20-588	E 95 St (964) bt Foster Av and Farragut Rd	MA	18	10/14/2020	10/15/2020	632	0	0
506	20-590	Glenwood Rd (2713) bt Bend and Kenilworth Pl	DC	14	10/23/2020	10/28/2020	0	0	0
			MA	14	10/23/2020	10/28/2020	248	0	0
507	20-591	Coney Island Av and Parkville Av	KB	14	10/15/2020	10/20/2020	354	0	0
			MA	14	10/15/2020	10/20/2020	598	0	0
508	20-592	Hopkinson Av (527) bt Pitkin Av and Sutter Av	MA	16	10/15/2020	10/22/2020	522	0	0
			SA	16	10/15/2020	10/22/2020	422	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
509	20-621	E 29 St (647) bt Farragut Rd and Flatbush Av	MA	14	11/12/2020	11/12/2020	839	0	0
510	20-622	58 St (1615) bt 16 Av and DE	MA	12	11/3/2020	11/3/2020	478	0	0
511	20-623	Av F bt McDonald Av and E 2 St	MA	12	11/13/2020	11/16/2020	881	0	0
512	20-624	E 35 St bt Av I and Flatbush Av	DC	18	11/5/2020	11/10/2020	208	0	0
			MA	18	11/5/2020	11/10/2020	1,120	0	0
513	20-641	W 11 St bt Av V and Av W	CO	13	11/2/2020	-	0	0	0
			DC	13	11/2/2020	-	0	0	0
			JP	13	11/2/2020	-	0	0	0
			JS	13	11/2/2020	-	0	0	0
			MA	13	11/2/2020	-	0	0	0
			RF	13	11/2/2020	-	0	0	0
			SA	13	11/2/2020	-	0	0	0
			ZS	13	11/2/2020	-	0	0	0
			TB	13	11/2/2020	-	0	0	0
514	20-646	Gravesend Neck Rd (727) bt E 7 St and E 8 St	EV	15	11/30/2020	11/30/2020	259	0	0
			MA	15	11/30/2020	11/30/2020	504	0	0
515	20-647	Glenwood Rd (9024) bt Remsen Av and Durland Pl	MA	18	11/17/2020	11/28/2020	467	0	0
516	20-648	Barbey St (459) bt Belmont Av and Sutter Av	MA	05	11/16/2020	11/17/2020	466	0	0
517	20-657	E 15 St (854) bt E 15 St Footbridge and Av I	EV	14	11/25/2020	11/25/2020	488	0	0
518	20-658	Foster Av (9233) bt E 92 St and E 93 St	EV	18	11/18/2020	11/24/2020	176	0	0
519	20-689	Dorchester Rd bt E 21 St and Flatbush Av	MA	14	12/1/2020	12/2/2020	538	0	0
520	20-694	Myrtle Av (1466) bt Menahan St and Grove St	MA	04	12/4/2020	12/4/2020	242	0	0
521	20-698	Carroll St (842) bt 8 Av and Prospect Park (W)	MA	06	12/3/2020	12/4/2020	695	0	0

Apeendix 2.1.4.2.2: Manhattan

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
522	13-525	W 125 St (319) bt 8 Av and St Nicholas Av	AB	10	3/3/2020	3/6/2020	840	0	0
523	16-754	Orchard St bt Delancey St and Rivington St	MA	03	6/19/2020	6/22/2020	702	0	0
524	17-661	Bowery (176) bt Kenmare St and Spring St	EV	02	9/23/2020	9/25/2020	314	0	0
525	17-697	Bowery (161) bt Broome St and Delancey St	DC	03	9/25/2020	-	313	0	0
			EV	03	9/25/2020	-	499	0	0
			JL	03	9/25/2020	-	0	0	0
526	18-451	Greenwich St (125) bt Albany St and Thames St	CO	01	5/21/2020	-	0	0	0
			DC	01	5/21/2020	-	134	0	0
527	18-470	E 21 St bt 5 Av and Broadway	EV	05	11/9/2020	11/25/2020	514	0	0
			JL	05	11/9/2020	11/25/2020	1,327	0	0
528	18-533	1 Av (160) bt E 9 St and E 10 St	NH	03	4/17/2020	4/28/2020	738	0	0
529	18-704	W 111 St (230) bt Adam Clayton Powell Jr Blvd and Frederick Douglas	AB	10	3/5/2020	3/10/2020	0	0	0
			MA	10	3/5/2020	3/10/2020	715	0	0
530	18-715	E 117 St (250) bt 3 Av and 2 Av	EV	11	3/24/2020	3/30/2020	786	0	0
531	18-728	Charlton St (96) bt Hudson St and Greenwich St	EV	02	3/26/2020	3/27/2020	509	0	0
532	18-731	Jones St (21) bt W 4 St and Bleecker St	NH	02	3/26/2020	3/31/2020	703	0	0
533	18-757	3 Av (708) bt E 44 St and E 45 St	EV	06	7/13/2020	7/21/2020	547	0	0
534	18-820	W 28 St (530) bt High Line and 11 Av	AB	04	2/11/2020	11/27/2020	598	0	0
			CO	04	2/11/2020	11/27/2020	121	0	0
535	18-832	Greenwich Av (79) bt Bank St and W 11 St	AB	02	1/13/2020	1/24/2020	1,605	0	0
			FM	02	1/13/2020	1/24/2020	98	0	0
			RF	02	1/13/2020	1/24/2020	199	0	0
536	18-899	W 148 St (302) bt Bradhurst Av and Frederick Douglass Blvd	EV	10	10/27/2020	11/5/2020	166	0	0
			JL	10	10/27/2020	11/5/2020	504	0	0
537	19-062	W 42 St (130) bt Av of the Americas and Broadway	EV	05	7/22/2020	7/22/2020	495	0	0
538	19-207	W 135 St (601) bt Broadway and Riverside Dr	AB	09	2/21/2020	2/25/2020	291	0	0
			FM	09	2/21/2020	2/25/2020	201	0	0
539	19-217	Hudson St (435) bt Leroy St and Morton St	EV	02	9/17/2020	9/21/2020	99	0	0
			PR	02	9/17/2020	9/21/2020	218	0	0
540	19-504	W 85 St (24) bt Central Park W and Columbus Av	FM	07	2/25/2020	3/3/2020	650	0	0
541	19-592	W 73 St and Amsterdam Av	AB	07	2/19/2020	2/24/2020	462	0	0
			FM	07	2/19/2020	2/24/2020	179	0	0
542	19-593	W 113 St (229) bt Adam Clayton Powell Jr Blvd and Frederick Douglas	FM	10	2/3/2020	-	338	0	0
			JB	10	1/31/2020	2/3/2020	0	0	0
543	19-628	LaGuardia Pl (540) bt Bleecker St and W 3 St	EV	02	9/14/2020	9/17/2020	329	0	0
			PR	02	9/14/2020	9/17/2020	110	0	0
544	19-640	W 119 St (32) bt 5 Av and Lenox Av	JS	10	4/9/2020	4/14/2020	420	0	0
			PR	10	4/9/2020	4/14/2020	470	0	0
			SA	10	4/9/2020	4/14/2020	35	0	0
545	19-645	Edgecombe Av (104) bt W 139 St and W 140 St	AB	10	3/3/2020	3/3/2020	211	0	0
546	19-682	W End Av (55) bt W 62 St and Thelonious Monk Crcl	AB	07	2/20/2020	-	125	0	0
547	19-684	Broadway (1900) bt W 63 St and W 64 St	EV	07	10/27/2020	10/28/2020	0	0	0
			JL	07	10/27/2020	10/28/2020	300	0	0
548	19-695	7 Av bt W 41 St and W 42 St-MED679	FM	05	2/26/2020	2/27/2020	241	0	0
549	19-719	Bridge St and Broad St	AB	01	12/17/2019	12/19/2019	6	0	0
			EC	01	1/27/2020	2/4/2020	0	0	0
			FM	01	1/27/2020	2/4/2020	0	0	0
			JB	01	1/27/2020	2/4/2020	0	0	0
550	19-795	King St bt Greenwich St and Hudson St	JB	02	1/28/2020	1/30/2020	428	0	0
551	19-796	Academy St and Broadway	EV	12	9/21/2020	9/23/2020	948	0	0
552	20-005	Broadway and W 63 St	FM	07	1/14/2020	1/17/2020	1,786	0	0
553	20-047	Hamilton Terr (22) bt W 141 St and W 144 St	AB	09	3/2/2020	3/2/2020	880	0	0
554	20-048	6 Av (1330) bt W 53 St and W 54 St	JL	05	8/13/2020	8/18/2020	309	0	0
			TC	05	8/13/2020	8/18/2020	0	0	0
555	20-111	W 35 St (225) bt 7 Av and 8 Av	NH	05	4/2/2020	4/3/2020	983	0	0
556	20-125	1 Av bt E 68 St and E 69 St	NH	08	3/24/2020	3/25/2020	626	0	0
557	20-126	Lexington Av bt E 107 St and E 108 St	CO	11	3/23/2020	4/14/2020	123	0	0
558	20-129	E 27 St (133) bt Lexington Av and Broadway Ally	NH	06	3/31/2020	4/1/2020	467	0	0
559	20-180	Grand St (466) bt Pitt St and Bialystoker Pl	NH	03	5/22/2020	5/26/2020	415	0	0
560	20-183	St Nicholas Av (1412) bt W 180 St and W 181 St	DC	12	4/17/2020	4/17/2020	439	0	0
561	20-218	W 88 St (200) bt Broadway and Amsterdam Av	NH	07	4/28/2020	4/29/2020	587	0	0
562	20-227	Park Av (425) bt E 55 St and E 56 St	CO	05	4/15/2020	4/16/2020	407	0	0
563	20-228	Spring St (260) bt Varick St and Hudson St	NH	02	4/23/2020	4/24/2020	936	0	0
564	20-242	Broome St and Lewis St	NH	03	4/20/2020	-	340	0	0
565	20-244	Ft Washington Av (177) bt W 165 St and W 168 St	CO	12	4/20/2020	4/23/2020	551	0	0
			JS	12	4/20/2020	4/23/2020	435	0	0
			PR	12	4/20/2020	4/23/2020	603	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
566	20-245	E 68 St (210) bt 3 Av and 2 Av	NH	08	4/30/2020	2/23/2021	572	0	0
567	20-270	W 139 St (103) bt Lenox Av and 7 Av	NH	10	5/11/2020	5/13/2020	803	0	0
568	20-284	W 139 St (507) bt Amsterdam Av and Hamilton Pl	DC	09	5/15/2020	5/15/2020	377	0	0
569	20-326	W 141 St (208) bt Adam Clayton Powell Jr Blvd and Frederick Douglas	DC	10	6/23/2020	6/25/2020	286	0	0
			SA	10	6/23/2020	6/25/2020	31	0	0
			TC	10	6/23/2020	6/25/2020	414	0	0
570	20-334	E 39 St (23) bt Madison Av and Park Av	EV	06	7/6/2020	7/7/2020	318	0	0
571	20-342	Saint Nicholas Av and W 112 St	EV	10	7/10/2020	7/13/2020	404	0	0
572	20-353	E 2 St (126) bt Av A and 1 Av	CO	03	6/29/2020	6/29/2020	0	0	0
573	20-354	Greenwich St (275) bt Murray St and Warren St	EV	01	6/29/2020	7/6/2020	274	0	0
			KB	01	6/29/2020	7/6/2020	446	0	0
574	20-361	Overlook Ter (55) bt W 186 St and W 187 ST	EV	12	7/2/2020	7/2/2020	850	0	0
575	20-365	Greene St bt Washington Pl and Waverly Pl	JL	02	7/6/2020	-	442	0	0
			KB	02	7/6/2020	-	0	0	0
576	20-381	E 42 St and Lexington Av	EV	05	7/16/2020	7/31/2020	332	0	0
577	20-400	77 St Outfall NB FDR Dr Promenade	EV		7/23/2020	7/23/2020	69	0	0
			EV		7/24/2020	7/24/2020	0	0	0
578	20-454	Riverside Dr (280) bt W End Av and Riverside Dr	JL	07	8/19/2020	-	1,009	0	0
579	20-558	5 Av (230) bt E 26 St and E 27 St	EV	05	9/24/2020	-	390	0	0
580	20-595	W 24 St (202) bt 7 Av and 8 Av	JL	04	10/19/2020	10/22/2020	1,304	0	0
581	20-599	W 55 St and 5 Av	EV	05	10/15/2020	10/20/2020	558	0	0
			JL	05	10/15/2020	10/20/2020	25	0	0
			SA	05	10/15/2020	10/20/2020	363	0	0
582	20-608	FDR Dr and E 34 St	JL	06	10/21/2020	10/21/2020	206	0	0
583	20-645	St Nicholas Av (691) bt W 141 and W 145 St	CO	09	11/30/2020	12/1/2020	395	0	0
			JL	09	11/30/2020	12/1/2020	586	0	0
584	20-650	1 Av (134) bt St Marks Pl and E 9 St	JL	03	11/6/2020	11/9/2020	400	0	0
585	20-690	South St and Catherine Slip	EV	03	12/16/2020	-	0	0	0
			JL	03	12/16/2020	-	111	0	0
586	20-691	Lexington Av bt E 107 St and E 108 St	EV	11	12/2/2020	-	0	0	0
			JL	11	12/2/2020	-	77	0	0

Apeendix 2.1.4.2.3: Queens

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
587	14-037	109 Av (153-14)	JS	12	5/11/2020	6/15/2020	86	0	0
			NH	12	5/11/2020	6/15/2020	1,811	0	0
588	14-198	118 St (14-53) bt 14 Rd and 15 Av	JB	07	2/3/2020	2/12/2020	489	0	0
589	15-368	107 Av (150-21)	JS	12	5/14/2020	5/18/2020	296	0	0
			SA	12	5/14/2020	5/18/2020	847	0	0
590	16-215	233 St (139-42)	EV	13	10/5/2020	10/5/2020	548	0	0
591	16-485	58 Rd/Easement bt Maspeth Av and 47 St	EC	05	2/21/2020	-	0	0	0
592	17-016	126 Av (174-50) bt 174 Pl and 176 St	PR	12	9/16/2020	9/17/2020	554	0	0
593	17-615	164 Av (98-08) bt 98 St and 99 St	JL	10	10/6/2020	10/9/2020	762	0	0
594	17-730	Merrick Blvd and Baisley Blvd	DC	12	1/6/2020	5/29/2020	139	0	0
			DC		4/26/2019	3/31/2020	0	0	0
			EC	12	4/26/2019	3/31/2020	0	0	0
			EV	12	1/6/2020	5/29/2020	1,953	0	0
			FM	12	4/26/2019	3/31/2020	0	0	0
			JL	12	1/6/2020	5/29/2020	3,773	0	0
			JL		4/26/2019	3/31/2020	0	0	0
			JP	12	1/6/2020	5/29/2020	1,088	0	0
			JP		9/22/2020	-	0	0	0
			JP		4/26/2019	3/31/2020	0	0	0
			KB	12	1/6/2020	5/29/2020	751	0	0
			KB		4/26/2019	3/31/2020	0	0	0
			MA	12	1/6/2020	5/29/2020	133	0	0
			PR	12	1/6/2020	5/29/2020	618	0	0
			RF	12	1/6/2020	5/29/2020	6,167	0	0
			RF		9/22/2020	-	0	0	0
			RF		4/26/2019	3/31/2020	0	0	0
			SA	12	1/6/2020	5/29/2020	261	0	0
			TC	12	4/26/2019	3/31/2020	0	0	0
			ZS	12	4/26/2019	3/31/2020	0	0	0
595	17-969	50 Av (11-49) bt 11 Pl and 21 St	JL	02	10/19/2020	10/21/2020	597	0	0
596	17-980	Coldspring Rd (27-30) bt Bay 27 St and Bay Park Pl	SA	14	12/2/2019	5/7/2020	648	0	0
597	18-202	108 St (87-24) bt Jamaica Av and 91 Av	JL	09	10/9/2020	10/13/2020	855	0	0
598	18-221	Union Hall St (108-24)	JL	12	10/21/2020	10/22/2020	981	0	0
599	18-296	48 St (50-54) bt 50 Av and Laurel Hill Blvd	DC	02	9/30/2020	10/6/2020	567	0	0
			JL	02	9/30/2020	10/6/2020	262	0	0
600	18-307	93 Av (93-14) bt Woodhaven Blvd and 95 St	JB	09	2/10/2020	2/10/2020	223	0	0
601	18-332	83 St (64-61) bt 64 Rd and Furmanville Av	JB	05	2/10/2020	2/10/2020	441	0	0
602	18-453	Rockaway Blvd (131-14) bt 131 St and 120 Av	JB	10	1/9/2020	1/9/2020	66	0	0
603	18-459	Beach 98 St (319) bt Rockaway Frwy and Beach Channel Dr	FM	14	10/25/2018	1/3/2020	421	0	0
604	18-485	51 Av (5-40) bt 5 St and Vernon Blvd	NH	02	3/23/2020	3/23/2020	654	0	0
605	18-855	Lakewood Ave and Sutphin Blvd	AB	12	12/6/2019	7/31/2020	753	0	0
			CO	12	4/23/2020	8/27/2020	0	0	0
			DC	12	4/23/2020	8/27/2020	0	0	0
			EC	12	4/23/2020	8/27/2020	0	0	0
			JL	12	4/23/2020	8/27/2020	0	0	0
			JP	12	4/23/2020	8/27/2020	0	0	0
			PR	12	4/23/2020	8/27/2020	0	0	0
			RF	12	4/23/2020	8/27/2020	0	0	0
			TB	12	4/23/2020	8/27/2020	0	0	0
			NH	12	4/23/2020	8/27/2020	0	0	0
606	18-886	Tuskegee Airman Way (164-28) bt 164 St and 165 St	FM	12	1/27/2020	6/22/2020	0	0	0
			NH	12	1/27/2020	6/22/2020	924	0	0
607	18-887	Winchester Blvd bt 92 Av and 221 Pl	JS	13	9/10/2020	9/11/2020	877	0	0
608	19-013	B 88 St bt Rockaway Fwy and Rockaway B Blvd	DC	14	8/26/2020	8/26/2020	277	0	0
609	19-019	250 St (82-65) bt 82 Av and 83 Av	JL	13	7/13/2020	7/3/2020	707	0	0
610	19-055	199 St and Union Tpke	EV	08	9/24/2020	9/29/2020	2,118	0	0
611	19-089	117 St (87-03) bt Jamaica Av and 89 Av	FM	09	1/8/2020	1/9/2020	934	0	0
612	19-090	Virginia St (13-11) bt Central Av and Brunswick Av	AB	14	2/27/2020	2/8/2021	328	0	0
613	19-132	Murdock Av bt 177 St and 178 St	DC	12	5/20/2020	5/20/2020	531	0	0
614	19-146	160 Av (101-06) bt 101 St and 102 St	FM	10	1/27/2020	2/4/2020	594	0	0
615	19-156	Northern Blvd W of Honeywell St (Northern Blvd Siphon Issues)	KB	01	12/2/2020	-	0	0	0
			TC	01	12/2/2020	-	0	0	0
			TB	01	12/2/2020	-	0	0	0
616	19-178	Liverpool St (95-06) bt 95 Av and 97 Av	PR	12	5/12/2020	5/12/2020	316	0	0
617	19-179	Liverpool St (106-41) bt South Rd and 107 Av	CO	12	5/18/2020	5/20/2020	709	0	0
			DC	12	5/18/2020	5/20/2020	0	0	0
			JS	12	5/18/2020	5/20/2020	220	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
618	19-182	42 Av (215-01) bt 215 St and 215 Pl	FM	11	1/10/2020	1/14/2020	96	0	0
			JB	11	1/10/2020	1/14/2020	149	0	0
			TC	11	1/10/2020	1/14/2020	311	0	0
619	19-202	132 Av (137-05) bt Van Wyck Scp and 140 St	EV	12	11/3/2020	11/4/2020	494	0	0
620	19-203	138 St (88-38) bt Hillside Av and Jamaica Av	EV	12	10/26/2020	10/26/2020	418	0	0
			KB	12	10/26/2020	10/26/2020	180	0	0
621	19-225	Northern Blvd bt 150 St and 149 Pl	JB	07	1/10/2020	1/10/2020	312	0	0
622	19-226	74 Av (99-55) bt Metropolitan Av and Kessel St	FM	06	1/30/2020	1/31/2020	688	0	0
623	19-257	Mott Ave (24-21) bt B 25 St and B 24 St	AB	14	2/26/2020	2/26/2020	1,495	0	0
624	19-297	Madison St (60-72) bt 60 Pl and Fresh Pond Rd	EC	05	1/9/2020	10/16/2020	646	0	0
			EV	05	1/9/2020	10/16/2020	0	0	0
			FM	05	1/9/2020	10/16/2020	0	0	0
			JL	05	1/9/2020	10/16/2020	148	0	0
625	19-343	14 Rd bt 119 St and 120 St	FM	07	1/22/2020	1/23/2020	611	0	0
626	19-379	111 Av (190-27) bt 194 St and Farmers Blvd	EV	12	11/18/2020	11/18/2020	940	0	0
627	19-380	208 St (86-35) bt Grand Central Pkwy Service Rd E and 86 Rd	JL	08	10/30/2020	10/30/2020	588	0	0
628	19-381	120 Av (169-29) bt 170 St and Marsden St	JL	12	10/28/2020	10/29/2020	768	0	0
629	19-461	168 St (67-47) bt 67 Av and 69 Av	JL	08	10/13/2020	10/14/2020	667	0	0
630	19-475	Melbourne Av (144-47) bt Main St and 147 St	FM	08	1/31/2020	2/3/2020	818	0	0
			JB	08	1/31/2020	2/3/2020	0	0	0
631	19-476	Hillside Av (136-06) bt 136 St and Van Wyck Exp SR W	DC	09	5/26/2020	6/1/2020	575	0	0
			PR	09	5/26/2020	6/1/2020	461	0	0
			NH	09	5/26/2020	6/1/2020	476	0	0
632	19-487	99 St from 22 Dr to 23 Av	FM	03	10/29/2019	1/7/2020	824	0	0
633	19-496	31 Av and 90 St	FM	03	1/23/2020	1/23/2020	580	0	0
634	19-498	Woodhaven Blvd (92-20) bt 92 Av and 93 Av	EV	09	9/11/2020	9/14/2020	194	0	0
			JS	09	9/11/2020	9/14/2020	490	0	0
635	19-525	38 St (21-25) bt 21 Av and Ditmars Blvd	EV	01	9/1/2020	9/1/2020	908	0	0
636	19-556	Hillside Av (169-18) bt 169 St and 170 St	SA	12	4/2/2020	4/2/2020	513	0	0
637	19-575	109 Ave (130-12) bt 130 St and 131 St	FM	10	1/10/2020	1/10/2020	477	0	0
638	19-576	89 Ave (139-01) bt 144 St and 139 St	EV	12	12/8/2020	-	185	0	0
639	19-596	102 St (32-13) bt 32 Av and Northern Blvd	AB	03	2/27/2020	2/27/2020	532	0	0
640	19-610	219 St (92-19) bt 92 Av and 93 Av	FM	13	10/7/2019	1/6/2020	905	0	0
641	19-624	110 St (63-36) bt 63 Rd and 63 Dr	DC	06	4/1/2020	4/1/2020	544	0	0
642	19-625	69 Pl (59-58) bt 59 Dr and 60 Av	MA	05	1/21/2020	1/21/2020	254	0	0
643	19-626	25 St (41-07) bt 41 Av and Ramp	NH	01	6/15/2020	6/16/2020	600	0	0
644	19-630	80 St (61-47) bt Eliot Av and 62 Av	JP	05	1/20/2020	1/21/2020	506	0	0
			MA	05	1/20/2020	1/21/2020	315	0	0
645	19-642	192 St (80-11) bt Union Tpke and 81 Av	JL	08	1/8/2020	1/8/2020	912	0	0
646	19-643	46 Av and 157 St	KB	07	10/24/2019	1/16/2020	493	0	0
647	19-672	90 Av (138-33) bt 138 Pl and 139 St	JP	12	1/16/2020	1/16/2020	696	0	0
648	19-685	Normal Rd (159-26) bt Parsons Blvd and 160 St	JB	08	1/15/2020	1/16/2020	822	0	0
			JP	08	1/15/2020	1/16/2020	0	0	0
649	19-754	14 Av bt 145 Pl and 146 St	KB	07	1/14/2020	1/16/2020	0	0	0
			TC	07	1/14/2020	1/16/2020	855	0	0
650	19-758	Daniels St and Pershing Cres	MA	08	1/9/2020	1/14/2020	896	0	0
			RF	08	1/9/2020	1/14/2020	1,029	0	0
651	19-771	189 St (47-36) bt 47 Av and 48 Av	KB	11	1/17/2020	1/17/2020	613	0	0
652	19-779	Kissena Blvd bt Geranium Av and Holly Av	DC	07	6/3/2020	6/3/2020	255	0	0
653	19-780	39 Av (219-03) bt 219 St and 220 St	AB	11	2/24/2020	2/24/2020	515	0	0
654	19-782	24 Rd bt 150 St and Willets Point Blvd	FM	07	1/22/2020	1/22/2020	463	0	0
655	19-783	150 St and S Conduit Av	FM	13	12/7/2019	1/31/2020	0	0	0
			JB	13	12/7/2019	1/31/2020	0	0	0
656	19-799	Sanitary Trunkline Sewer 1 In SE Queens	DC		4/1/2020	6/30/2020	0	0	0
			EC		1/20/2020	3/27/2020	0	0	0
			FM		1/20/2020	3/27/2020	721	0	0
			JL		1/20/2020	3/27/2020	0	0	0
			JP		4/1/2020	6/30/2020	0	0	0
			JP		1/20/2020	3/27/2020	0	0	0
			KB		4/1/2020	6/30/2020	0	0	0
			PR		4/1/2020	6/30/2020	0	0	0
			RF		4/1/2020	6/30/2020	0	0	0
			ZS		1/20/2020	3/27/2020	0	0	0
657	19-808	231 St (80-56) bt Stronghurst Av and Seward Av	FM	13	12/31/2019	1/2/2020	793	0	0
658	19-815	62 St bt 68 Av and Catalpa Av	RF	05	1/13/2020	-	456	0	0
659	19-816	79 Av (58-60) bt Cypress Av and 60 St	TC	05	1/10/2020	1/10/2020	650	0	0
660	20-017	84 St and Sutter Av	FM	10	1/24/2020	1/24/2020	763	0	0
661	20-018	82 St (132-04) bt Sutter Av and 133 Av	FM	10	1/27/2020	1/27/2020	519	0	0
662	20-026	109 Av bt 156 St and 157 St	FM	412	1/28/2020	1/28/2020	258	0	0
663	20-030	Beach 24 St (173) bt Dead End and Seagirt Blvd	AB	12	2/28/2020	2/28/2020	795	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
664	20-045	99 Av bt 219 St and 221 St	JB		2/6/2020	5/14/2020	710	0	0
			PR		2/6/2020	5/14/2020	531	0	0
			SA		2/6/2020	5/14/2020	434	0	0
665	20-049	Channing Rd (1195) bt B 9 St and B 12 St	AB	14	2/25/2020	2/25/2020	1,327	0	0
666	20-055	80 St and Eliot Av	EV	05	3/16/2020	3/17/2020	482	0	0
667	20-082	23 St (23-71) bt 23 Dr and 23 Terr	AB	01	2/21/2020	2/24/2020	0	0	0
			FM	01	2/21/2020	2/24/2020	515	0	0
668	20-083	73 Av bt 182 St and 183 St	AB	08	2/21/2020	2/24/2020	0	0	0
			FM	08	2/21/2020	2/24/2020	444	0	0
669	20-084	Corbett Rd (221-04) bt 221 St and 222 St	FM	11	3/2/2020	3/2/2020	263	0	0
670	20-094	Auburndale Ln bt Bagley Av and 47 Av	AB	11	2/20/2020	2/28/2020	168	0	0
			FM	11	2/20/2020	2/28/2020	909	0	0
671	20-106	114 Rd (194-56) bt 194 St and 196 St	EV	12	11/18/2020	11/18/2020	622	0	0
672	20-115	103 St (37-13) bt 37 Av and 39 Av	KB	03	4/6/2020	4/9/2020	1,181	0	0
			SA	03	4/6/2020	4/9/2020	51	0	0
673	20-116	107 Av (223-32) bt 223 St and 225 St	NH	13	3/12/2020	3/13/2020	1,053	0	0
674	20-127	221 St (117-23) bt Linden Blvd and 118 Av	DC	13	3/6/2020	3/6/2020	428	0	0
675	20-133	Grand Av and 58 Av	CO	05	3/10/2020	3/10/2020	475	0	0
676	20-134	59 Av (146-25) bt 146 St and 148 St	DC	07	3/6/2020	3/9/2020	406	0	0
			PR	07	3/6/2020	3/9/2020	584	0	0
677	20-135	92 St and Astoria Blvd	DC	03	3/30/2020	4/1/2020	226	0	0
			EV	03	3/30/2020	4/1/2020	0	0	0
			RF	03	3/30/2020	4/1/2020	582	0	0
678	20-137	171 St (76-27) bt 76 Av and 77 Rd	CO	08	3/9/2020	3/10/2020	44	0	0
			PR	08	3/9/2020	3/10/2020	164	0	0
679	20-138	Powells Cove Blvd (154-46) bt 154 Pl and 157 St	EV	07	3/16/2020	3/16/2020	622	0	0
680	20-164	86 St (91-49) bt 91 Av and Atlantic Av	CO	09	3/11/2020	3/12/2020	262	0	0
			NH	09	3/11/2020	3/12/2020	267	0	0
681	20-179	Booth Memorial Av (153-30) bt 153 St and Kissena Blvd	EV	07	3/17/2020	3/20/2020	809	0	0
682	20-181	118 Rd (168-12) bt Ring Pl and Marsden St	CO	12	5/8/2020	5/21/2020	261	0	0
			SA	12	5/8/2020	5/21/2020	689	0	0
683	20-184	Main St (57-29) bt 58 Av and 57 Rd	DC	07	4/3/2020	4/3/2020	420	0	0
684	20-185	137 St (13-04) bt 14 Av and 11 Av`	JL	07	10/29/2020	10/29/2020	661	0	0
685	20-193	138 Av bt 225 St and 226 St	DC	13	4/3/2020	4/7/2020	254	0	0
			KB	13	4/3/2020	4/7/2020	192	0	0
686	20-201	B 68 St (560) bt Elizabeth Av and Almeda Av	EV	14	3/19/2020	3/19/2020	688	0	0
687	20-208	38 Av (111-08) bt 111 St and 112 St	PR	03	5/6/2020	5/6/2020	378	0	0
688	20-209	164 St (61-44) bt Horace Harding Expy and 65 Av	JS	08	5/4/2020	5/5/2020	621	0	0
			PR	08	5/4/2020	5/5/2020	542	0	0
689	20-213	56 Rd (142-20) bt 142 St and 146 St	JS	07	4/28/2020	4/29/2020	0	0	0
			PR	07	4/28/2020	4/29/2020	637	0	0
690	20-216	Catalpa Av (60-45) bt 60 St and 60 Av	JS	05	4/28/2020	4/28/2020	583	0	0
691	20-225	Sanitary Trunkline Sewer 2 in SE Queens	CO		4/21/2020	-	0	0	0
			CO		6/26/2020	6/26/2020	322	0	0
			DC		4/21/2020	-	0	0	0
			EV		4/21/2020	-	0	0	0
			JL		4/21/2020	-	0	0	0
			JP		4/21/2020	-	0	0	0
			JS		4/21/2020	-	0	0	0
			PR		4/21/2020	-	0	0	0
			RF		4/21/2020	-	0	0	0
			SA		4/21/2020	-	0	0	0
692	20-235	120 Av bt 134 St and 135 St	CO	10	4/23/2020	4/27/2020	138	0	0
			JS	10	4/23/2020	4/27/2020	424	0	0
			SA	10	4/23/2020	4/27/2020	138	0	0
693	20-262	64 Pl (75-20) bt 74 Av and Cooper Av	JL	05	8/27/2020	8/27/2020	768	0	0
694	20-272	Hillside Ave (170-12) bt 170 St and 171 St	EV	12	10/27/2020	10/28/2020	503	0	0
			JL	12	10/27/2020	10/28/2020	0	0	0
695	20-276	135 St (114-06) bt Linden Blvd and 115 Ave	SA	10	6/5/2020	6/5/2020	602	0	0
696	20-277	129 St (97-14) bt 97 Ave and 101 Ave	JL	09	6/8/2020	6/9/2020	407	0	0
			SA	09	6/8/2020	6/9/2020	513	0	0
697	20-279	Mangin Ave (186-17) bt Wood St and Murdock Ave	CO	12	6/8/2020	6/8/2020	573	0	0
698	20-281	Beach 120 St (138) bt Ocean Pr and Rockaway Beach Blvd	CO	14	6/8/2020	6/10/2020	398	0	0
			DC	14	6/8/2020	6/10/2020	365	0	0
699	20-286	50 Av (40-08) bt 40 St and 41 St	CO	02	5/21/2020	5/21/2020	222	0	0
700	20-295	70 Rd (108-33) bt 108 St and 110 St	CO	06	6/1/2020	6/3/2020	958	0	0
			DC	06	6/1/2020	6/3/2020	260	0	0
			NH	06	6/1/2020	6/3/2020	264	0	0
701	20-296	26 Av (150-46) bt Murray Ln and Murray St	DC	07	6/3/2020	6/4/2020	172	0	0
			SA	07	6/3/2020	6/4/2020	630	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
702	20-299	154 St (28-20) bt 28 Av and 29 Av	NH	07	5/28/2020	5/28/2020	279	0	0
703	20-337	20 Av and 129 St	JS	07	6/29/2020	6/29/2020	786	0	0
704	20-339	34 St bt 47 Av and Queens Blvd	JL	02	7/8/2020	7/8/2020	776	0	0
705	20-356	31 St and Hoyt Av N	CO	01	7/9/2020	7/22/2020	190	0	0
			JL	01	7/9/2020	7/22/2020	482	0	0
			TC	01	7/9/2020	7/22/2020	0	0	0
706	20-378	Farrington St and Northern Blvd	JL	07	7/15/2020	7/20/2020	478	0	0
707	20-382	Greene Av and Onderdonk Av	EV	05	7/27/2020	7/28/2020	789	0	0
708	20-384	106 St (107-49) bt 107 Av and 109 Av	EV	10	7/24/2020	7/27/2020	419	0	0
709	20-411	Van Wyck Expy and 107 Av	EV	12	7/28/2020	-	1,899	0	0
710	20-419	147 Av bt 225 St and 229 St	EV	13	8/3/2020	8/12/2020	0	0	0
			JL	13	8/3/2020	8/12/2020	800	0	0
			JL		8/7/2020	8/7/2020	0	0	0
			JS	13	8/3/2020	8/12/2020	0	0	0
711	20-422	188 St bt 75 Av and Union Tpke	EV	08	7/29/2020	8/10/2020	760	0	0
712	20-425	109 Rd (164-16) bt Dead End and 167 St	EV	12	8/13/2020	8/21/2020	326	0	0
			JL	12	8/13/2020	8/21/2020	686	0	0
713	20-426	109 Ave (174-10) bt 174 St and 175 St	EV	12	8/12/2020	8/13/2020	403	0	0
			JS	12	8/12/2020	8/13/2020	478	0	0
714	20-429	73 Av bt 150 St and 153 St	EV	08	8/11/2020	8/12/2020	855	0	0
			JS	08	8/11/2020	8/12/2020	273	0	0
715	20-432	45 St (20-02) bt 20 Av and 20 Rd	EV	01	8/10/2020	8/10/2020	277	0	0
716	20-433	33 St and 36 Av	EV	01	8/20/2020	8/21/2020	1,481	0	0
717	20-434	63 St (57-16) bt Flushing Av and 59 Av	EV	05	8/24/2020	8/25/2020	891	0	0
718	20-444	Underhill Av bt 196 St and 196 Pl	EV	11	8/25/2020	8/25/2020	242	0	0
719	20-456	Gates Av (1702) bt Cypress Av and Seneca Av	EV	05	8/14/2020	8/18/2020	562	0	0
720	20-457	76 St bt Caldwell Av and 75 Pl	EV	05	8/18/2020	8/24/2020	784	0	0
721	20-458	94 St (30-16) bt 30 Av and 31 Av	EV	03	8/14/2020	8/14/2020	321	0	0
722	20-460	80 St (61-67) bt Eliot Av and 62 Av	EV	05	8/17/2020	-	818	0	0
723	20-461	41 Av (21-07) bt 21 St and 22 St	EV	01	8/19/2020	8/31/2020	727	0	0
			JL	01	8/19/2020	8/31/2020	308	0	0
			PR	01	8/19/2020	8/31/2020	120	0	0
			SA	01	8/19/2020	8/31/2020	0	0	0
724	20-462	6 Av (119-31) bt 119 St and Bend	JL	07	8/25/2020	8/26/2020	690	0	0
725	20-463	Northern Blvd (33-01) bt 33 St and 34 St	PR	01	8/19/2020	8/19/2020	314	0	0
726	20-468	57 Rd (84-32) bt 84 St and 85 St	JL	04	8/26/2020	-	448	0	0
727	20-473	36 St (37-26) bt 37 Av and Northern Blvd	DC	01	8/26/2020	8/26/2020	204	0	0
728	20-495	14 St (26-40) bt 26 Av and 27 Av	DC	01	9/24/2020	9/30/2020	0	0	0
			EV	01	9/24/2020	9/30/2020	418	0	0
729	20-496	160 St (45-89) bt 45 Av and 46 Av	EV	07	9/10/2020	9/14/2020	601	0	0
			JS	07	9/10/2020	9/14/2020	999	0	0
730	20-505	108 St (67-67) bt 67 Dr and 68 Av	EV	06	9/2/2020	9/9/2020	2,814	0	0
			PR	06	9/2/2020	9/9/2020	773	0	0
731	20-511	Haring St and 63 Dr	JS	06	9/9/2020	9/10/2020	997	0	0
732	20-514	35 Av (190-06) bt 190 St and 191 St	JS	11	9/8/2020	9/8/2020	675	0	0
733	20-532	263 St and 76 Av	EV	13	9/15/2020	9/18/2020	982	0	0
			PR	13	9/15/2020	9/18/2020	313	0	0
734	20-542	109 Av bt Monterey St and Springfield Blvd	EV	13	9/18/2020	9/22/2020	1,554	0	0
735	20-544	172 St (43-49) bt Northern Blvd and 45 Av	JL	07	10/8/2020	10/8/2020	721	0	0
736	20-546	12 St bt 34 Av and 35 Av	EV	01	9/22/2020	10/16/2020	1,295	0	0
737	20-548	Mexico St (115-31) bt Quencer Rd and Tioga Dr	EV	12	10/5/2020	10/5/2020	210	0	0
738	20-549	243 St bt 138 Av and N Conduit Av	JS	13	10/14/2020	10/14/2020	244	0	0
739	20-550	94 St (95-30) bt 95 Av and 97 Av	EV	09	10/5/2020	10/5/2020	590	0	0
			JL	09	10/5/2020	10/5/2020	307	0	0
740	20-579	Downing St (31-15) bt 31 Rd and 32 Av	JL	07	10/8/2020	10/9/2020	624	0	0
741	20-580	60 Av (60-77) bt 60 Ln and 61 St	JL	05	10/13/2020	10/13/2020	531	0	0
742	20-581	Rockaway Blvd bt 145 St and Inwood St	JL		10/9/2020	10/9/2020	288	0	0
743	20-596	25 Dr (149-48) bt DE and 150 St	EC	07	10/23/2020	10/23/2020	621	0	0
744	20-605	200 St (109-11) bt 109 Av and Hollis Av	JL	12	10/23/2020	10/23/2020	273	0	0
745	20-606	190 St (36-23) bt Crocheron Av and 37 Av	EC	11	10/22/2020	10/23/2020	199	0	0
			JL	11	10/22/2020	10/23/2020	252	0	0
746	20-607	77 St (95-14) bt 95 Av and 97 Av	JL	09	10/22/2020	10/23/2020	421	0	0
747	20-610	Whitestone Expy (17-10) bt 14 Av and Whitestone Expy Et 15 SB	CO	07	12/23/2020	12/24/2020	621	0	0
			DC	07	12/23/2020	12/24/2020	265	0	0
748	20-611	Homelawn St (85-18) bt Gothic Dr and Henley Rd	KB	08	10/26/2020	10/26/2020	386	0	0
749	20-615	Concord St (53-12) bt Upland Rd and Overlook Rd	JL	11	10/29/2020	-	547	0	0
750	20-630	103 St (39-06) bt 39 Av and National St	EV	03	11/4/2020	-	0	0	0
751	20-640	Aubrey Av (88-41) bt 88 St and Metropolitan Av	EV	05	10/30/2020	-	74	0	0
			JL	05	10/30/2020	-	1,164	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
752	20-642	Union Tpke (141-40) bt 141 St and Bend	CO	08	11/28/2020	11/30/2020	0	0	0
			EC	08	11/28/2020	11/30/2020	479	0	0
753	20-644	66 Rd bt 108 St and 110 St	JL	06	11/10/2020	11/13/2020	2,227	0	0
754	20-655	67 Av bt 210 St and 211 St	EV	11	11/16/2020	11/16/2020	78	0	0
			JL	11	11/16/2020	11/16/2020	382	0	0
755	20-687	41 Rd (222-08) bt 222 St and 223 St	EV	11	12/4/2020	12/7/2020	529	0	0
756	20-693	241 St (52-10) bt 52 Av and 53 Av	EV	11	12/9/2020	12/9/2020	582	0	0
757	20-696	Cornaga Av (12-23) bt Rose St and Gateway Blvd	JL	14	12/28/2020	12/28/2020	482	0	0
758	20-697	229 St bt 115 Rd and 116 Av	EV	13	12/7/2020	12/7/2020	651	0	0
759	20-699	70 St (52-31) bt 52 Av and 52 Dr	EV	05	12/3/2020	12/4/2020	0	0	0
			JL	05	12/3/2020	12/4/2020	484	0	0
760	20-728	B 90 St and Rockaway Beach Blvd	JL	14	12/28/2020	12/28/2020	338	0	0

Apeendix 2.1.4.2.4: Staten Island

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
761	15-600	Page Av bt Amboy Rd and Creek SE-812	JB	03	2/27/2020	2/27/2020	891	0	0
762	17-591	Project-R067-117M- Jefferson St bt Seaver Av and Dongan Hills Av (N	MA	02	4/3/2020	4/3/2020	815	0	0
763	18-105	Victory Blvd bt Logan Av and Ontario Av	MA	01	10/16/2020	10/20/2020	544	0	0
764	18-179	Castleton Av (1637) bt Sharpe Av and Treadwell Av	MA	01	5/27/2020	5/27/2020	822	0	0
765	18-443	Manor Rd (1018) bt Harold St and Bend	MA	02	4/20/2020	-	872	0	0
766	18-445	Castleton Av (303) bt Harbor View Ct and Bend	MA	01	5/12/2020	5/12/2020	435	0	0
767	18-784	Manee Av bt Amboy Rd and Utica St - SER002237	AB	03	1/10/2020	3/3/2020	122	0	0
			JB	03	1/10/2020	3/3/2020	453	0	0
768	18-831	Port Richmond Av (275) bt Palmer Av and Anderson Av	MA	01	6/16/2020	6/17/2020	1,319	0	0
769	18-834	Roe St (132) bt Delafield Av and Cary Av	JB	01	2/25/2020	2/26/2020	1,112	0	0
770	19-252	Green Valley Rd (302) bt Manchester Dr and Victoria Rd	MA	03	3/10/2020	3/10/2020	1,264	0	0
771	19-375	Bay St (580) bt Union Pl and Water St	DC	01	2/12/2020	2/13/2020	457	0	0
			EV	01	2/12/2020	2/13/2020	375	0	0
772	19-402	ACOE Seawall Sanitary Crossings	MA		7/1/2020	9/21/2020	1,665	0	0
773	19-410	Richmond Ter (1140) bt. David Av and Bard Av	DC	01	2/14/2020	2/18/2020	403	0	0
			EV	01	2/14/2020	2/18/2020	402	0	0
774	19-516	Bryant Av (16) bt Richmond Rd and Allison Pl	CO	02	3/30/2020	-	0	0	0
			MA	02	3/30/2020	-	654	0	0
775	19-522	Chesterton Av (213) bt Platt St and Hylan Blvd	EV	03	2/13/2020	2/14/2020	754	0	0
776	19-523	Saxon Av (110) bt Gadsen Pl and Draper Pl	CO	02	3/30/2020	3/30/2020	0	0	0
777	19-526	Chandler Av (86) bt S Greenleaf Av and Westcott Blvd	AB	01	1/10/2020	1/10/2020	655	0	0
778	19-535	Elverton Av (236) bt DE and Leverett Av	MA	03	5/22/2020	5/26/2020	0	0	0
			SA	03	5/22/2020	5/26/2020	1,119	0	0
779	19-561	Rossville Av (800) bt Woodrow Rd to Correll Av	MA	03	5/29/2020	6/1/2020	2,402	0	0
780	19-570	2 St (22) bt Rose Ave and New Dorp La	MA	02	3/11/2020	3/12/2020	639	0	0
781	19-571	Todt Hill Rd (715) bt Whitlock Ave and Four Corners Rd	MA	02	3/13/2020	3/16/2020	426	0	0
			NH	02	3/13/2020	3/16/2020	347	0	0
782	19-720	Grasmere Av (66) bt Railroad Av and Christ St	DC	02	2/11/2020	2/12/2020	399	0	0
783	19-743	Brabant St (142) bt Lockman Av and Grandview Av	JB	01	2/26/2020	7/8/2020	1,035	0	0
			MA	01	2/26/2020	7/8/2020	1,211	0	0
784	20-025	Graham Av bt Merrill Av and Fieldstone Rd	JB	02	1/28/2020	3/13/2020	1,887	0	0
			MA	02	1/28/2020	3/13/2020	1,433	0	0
785	20-038	Van Tuyl St (20) bt Dead End and York Av	DC	01	2/11/2020	2/11/2020	534	0	0
786	20-039	Brielle Av (501) bt Selmoff La and Rockland Av	MA	02	2/6/2020	2/6/2020	930	0	0
787	20-102	Faber St (54) bt Larkin St and Grove Av	MA	01	4/10/2020	4/17/2020	611	0	0
			SA	01	4/10/2020	4/17/2020	605	0	0
788	20-109	Bloomingdale Rd (449) bt Mandy Ct and Marvin Rd	MA	03	4/13/2020	4/14/2020	792	0	0
789	20-113	Lake Av (125) bt Staten Island Railway Line & Walker St	JP	01	4/1/2020	4/3/2020	227	0	0
			MA	01	4/1/2020	4/3/2020	372	0	0
790	20-219	Lester St (24) bt Garden St and Josephine St	MA	01	8/20/2020	8/25/2020	224	0	0
			SA	01	8/20/2020	8/25/2020	52	0	0
791	20-238	Mountainview Av (453) bt Brielle Av and Portage Av	MA	02	5/11/2020	5/11/2020	657	0	0
792	20-239	Dunham St (145) bt Erie St and Outerbridge Av	MA	03	5/8/2020	5/8/2020	870	0	0
793	20-241	Vicinity of Shore Acres Rd	SA		8/25/2020	8/25/2020	85	0	0
794	20-274	Middle Loop Rd (96) bt Armstrong Ave and Cortelyou Ave	MA	03	6/3/2020	6/3/2020	548	0	0
795	20-302	Clove Rd (1498) bt Howard Av and Little Clove Rd	MA	01	6/9/2020	6/11/2020	1,476	0	0
796	20-345	Richmond Terr (75) bt N Ramp Viaduuct snd Hamilton Av	JS	01	8/12/2020	9/9/2020	429	0	0
			MA	01	8/12/2020	9/9/2020	251	0	0
797	20-346	Raymond Pl and Delafield Av	JS	01	7/31/2020	8/6/2020	654	0	0
			MA	01	7/31/2020	8/6/2020	668	0	0
798	20-360	Hillcrest Ter (130) bt Clove Rd and Hillcrest Ct	MA	02	8/25/2020	9/21/2020	468	0	0
			SA	02	8/25/2020	9/21/2020	340	0	0
799	20-377	Mary St (41) bt Rhine Av and Deirdre Ct	MA	01	9/23/2020	9/24/2020	23	0	0
800	20-410	Willowbrook Rd (624) bt Wyona Av and Neptune Pl	MA	01	8/26/2020	8/28/2020	362	0	0
801	20-417	Ovis Pl (41) bt Thollen St and Bend	MA	03	7/29/2020	7/30/2020	1,374	0	0
802	20-469	Hillman Av bt Merrill Av and Jardine Av	DC	02	12/15/2020	12/29/2020	478	0	0
			EV	02	12/15/2020	12/29/2020	253	0	0
			KB	02	12/15/2020	12/29/2020	0	0	0
			MA	02	12/15/2020	12/29/2020	1,390	0	0
803	20-470	Hylan Blvd and RedGrave Av	MA	03	10/19/2020	10/19/2020	640	0	0
804	20-484	Arthur Kill Rd and W SR	MA	03	8/28/2020	8/28/2020	400	0	0
805	20-545	Josephine St-SER002331-SER200303	MA	01	10/16/2020	10/16/2020	0	0	0
806	20-577	Lincoln Av (615) bt Baden Pl and Patterson Av	EV	02	10/7/2020	10/8/2020	0	0	0
			MA	02	10/7/2020	10/8/2020	706	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
807	20-604	Marisa Cir (25) and Bend	EV	03	12/22/2020	12/23/2020	459	0	0
			JL	03	12/22/2020	12/23/2020	0	0	0
808	20-636	Egmont Pl (21) bt Hamilton Ave and Dead End	EV	01	12/23/2020	12/23/2020	870	0	0
809	20-718	Holland Av bt Benjamin Pl and Richmond Ter	MA	01	12/30/2020	12/31/2020	1,144	0	0

Apeendix 2.1.4.2.5: Bronx

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF) Cleaned	Surveyed	Walked
810	13-1014	Randall Av (bend) Soundview Park HP-10 CSO25	CJ	09	8/25/2020	9/15/2020	0	0	0
			RF	09	8/25/2020	9/15/2020	0	0	0
811	17-966	Walton Av (1453) bt E 171 St and E 172 St	FM	04	2/18/2020	2/18/2020	803	0	0
812	18-224	Poplar St (2576)	FM	11	2/19/2020	2/20/2020	1,010	0	0
813	19-081	Seneca Av (1357) bt LongFellow Av and Whittier St	CO	02	6/3/2020	6/5/2020	0	0	0
			DC	02	6/3/2020	6/5/2020	763	0	0
			JB	02	2/11/2020	2/11/2020	364	0	0
			JB		2/13/2020	2/13/2020	195	0	0
814	19-155	Bronxdale Av (2040) bt Antin Pl and Cruger Av	AB	11	2/13/2020	2/14/2020	622	0	0
815	19-266	Sedgwick Av (1560) bt Cross Bronx Expy Et 1 D SB and W 176 St	AB	05	2/18/2020	2/18/2020	1,243	0	0
816	19-282	Nelson Av (1415) bt Edward L Granr Hwy and W 172 St	JB	04	2/12/2020	2/12/2020	886	0	0
817	19-600	E 204 St (243) bt Valentine Av and E Mosholu Pkwy S	MA	07	2/14/2020	2/14/2020	618	0	0
818	20-090	W 247 St (613) bt Alderbrook Rd and Arlington Av	CO	08	3/11/2020	5/1/2020	1,308	0	0
			SA	08	3/11/2020	5/1/2020	19	0	0
819	20-108	Grand Av (2271) bt Evelyn Pl and W 183 St	SA	07	5/1/2020	1/28/2021	270	0	0
820	20-146	Tenbroeck Av (2514) bt Mace Av and Allerton Av	FM	11	3/4/2020	3/4/2020	1,145	0	0
821	20-147	E 150 St (330) bt Morris Av and Courtlandt Av	FM	01	3/5/2020	3/5/2020	836	0	0
822	20-280	Jerome Ave (2501) bt E 190 St and W 192 St	RF	07	6/25/2020	6/26/2020	719	0	0
			SA	07	6/25/2020	6/26/2020	0	0	0
823	20-376	Major Deegan Exp and W 167 St-Shaft 7	EV		7/15/2020	7/16/2020	100	0	0
824	20-557A	3 Av (2455) bt E 134 St and E 135 St	EC		10/19/2020	12/4/2020	0	0	0
			EV		10/19/2020	12/4/2020	0	0	0
			JL		10/19/2020	12/4/2020	302	0	0
			TC		10/19/2020	12/4/2020	0	0	0
825	20-565	Zerega Av (930) bt Quimby Av and Cross Bronx Expwy	EV	09	9/28/2020	10/2/2020	785	0	0
826	20-576	Villa Av bt Bedford Park Blvd and E 204 St	JL	07	10/6/2020	10/8/2020	811	0	0
827	20-673	131 W 197 St bt Claflin Av and Webb Av	EV	08	11/20/2020	-	214	0	0
828	20-721	Lafayette Av bt Metcalf Av and Morrison Av	DC	09	12/11/2020	-	119	0	0
			EV	09	12/11/2020	-	394	0	0
			SA	09	12/11/2020	-	256	0	0
829	20-722	E 186 St (446) bt Park Av and Washington Av	DC	06	12/29/2020	12/30/2020	14	0	0
			JL	06	12/29/2020	12/30/2020	85	0	0
830	20-724	Ropes Av (3545) bt Flint Av and Boston Rd	CO	12	12/31/2020	12/31/2020	567	0	0

2020 Citywide Contract Total, LF:	**380,359**	(72.04 mi)	**1/2/2020**	**12/31/2020**	**380,359**	**0**	**0**
Operating Expenses, $	**8,437,850**						

* No footage indicates investigation where inspection of sewers was not required or completed

IN-HOUSE SURVEY + CITYWIDE CONTRACT:							
2020 Total, LF:	**418,448**	(79.25 mi)	**1/2/2020**	**12/31/2020**	**381,642**	**31,717**	**5,089**
Operating Expenses, $	**8,437,850**						

Appendix 2.2: BWT

Appendix 2.2.1: Table 1 - Summary of 100 Telemetered Regulators

Summary of 100 Telemetered Regulators

= 17 with Inclinometers

= 27 Key Regulators*

05/01/16

No.	WPCP	Reg. No.	Regulator Location	Outfall SPDES No.	Reg. Type	Flow Compartment	Weir Data Length (ft)	Weir Data Elev. (ft)	Hydraulic Capacity (mgd)	Flow Data Peak (mgd)	Flow Data Mean DWF (mgd)
1	26W	01	TIDE GATE (26 WARD WPCP)	004	TG.	S.G./72"x56"			N/A	21.71	19.15
2	26W	02	WILLIAMS & FLATLANDS AVES.	003	HYD.	S.G./48"x36"	68'-0"	-6.00	32.85	11.34	9.80
3	26W	03	CRESENT ST. & FLATLANDS AVE.	005	HYD.	S.G./48"x36"	76'-0"	-6.85	38.53	29.72	24.64
3 Subtotal											
1	BBL	L-04	47th AV. BETW. 28th & 29th ST.	026	HYD	SG/36"x30"	9'-0"	-2.50	24.46	9.57	6.67
2	BBL	L-21	37th AVE. & VERNON BLVD.	028	HYD	SG/30"x24"	22'-6"	-4.00	20.00	14.50	11.19
3	BBL	L-22	VRNON BLVD. & BROADWAY	029	HYD	SG/30"x24"	12'-0"	-5.00	19.72	12.18	9.06
4	BBL	L-23	30th RD. & VERNON BLVD.	030	DC/TG	FO/12"DIA.	2'-0"	-1.75	1.36	N/A	0.21
5	BBL	L-30	ASTORIA PARKS E/O SHORE BLVD.	034	HYD	SG/24"x24"	13'-0"	-0.25	12.67	15.48	12.28
6	BBH	02	45th ST. & PLANT	002	DC/TG	AT THE PLANT	9'-0"	-3.50	N/A	89.08	61.32
7	BBH	03	HAZEN ST. & 19th ST. AVE.	003	DC/TG	FO /18" DIA.	5'-6"	+4.00	7.45	2.16	1.54
8	BBH	06	108th ST. & DITMARS BLVD.	008	DC	FO,DP	4'-0"	+9.00	94.94	N/A	33.29
9	BBH	09	108th ST. & 43rd. AVE.	008	DC	FO,DP	5'-0"	+14.80	99.58	49.71	40.27
9 Subtotal											
1	HP	01	E.177th ST. E/O TIERNEY PL.	022	HYD.	S.G./18"x12"	9'-2"	-5.00	4.35	1.52	0.61
2	HP	02	SHORE DR. S/O PENNYFIELD AVE.	021	HYD.	S.G./30"x30"	8'-0"	-4.77	13.17	6.56	5.61
3	HP	03	CALHOUN AVE. S/O SCHURZ AVE.	019	HYD.	S.G./12"x12"	8'-0"	-2.88	2.71	1.84	1.30
4	HP	04	BRUSH AVE. & BRUCKNER BLVD.	016	HYD.	S.G./30"x30"	8'-10"	-4.50	9.84	4.18	3.18
5	HP	05	WHITE PL. RD. S/O RIVER AVE.	011	HYD.	S.G./18"x12"	26'-0"	-4.50	1.87	N/A	0.50
6	HP	06	WHITE PL. RD. & O'BRIEN AVE.	011	HYD.	S.G./2EA.72"x48"	8'-0"	-5.00	150.13	81.41	66.49
7	HP	08	TRUXTON ST. & OAKPOINT AVE.	025	HYD.	S.G./24"x24"	9'-0"	-2.92	15.27	6.86	5.30
8	HP	09	TIFFANY ST. & EAST BAY AVE.	002	HYD.	S.G.48"x36"	12'-0"	-3.60	52.54	15.41	11.94
9	HP	10	HUNTS POINT AVE. & RYAWA AVE.	003	HYD.	S.G./2EA.36"x30"	15'-0"	-3.65	56.38	18.01	15.58
10	HP	11	EMERSON & SCHURZ AVENUES	017	HYD.	S.G.18"x18"	16'-6"	-4.00	5.58	2.33	1.40
11	HP	12	ROBINSON & SCHURZ AVENUES	018	HYD.	S.G./12"x12"	4'-0"	-2.72	3.48	0.17	0.09
12	HP	13	METCALF AVE. & SOUNDVIEW PARK	009	HYD.	S.G./2EA.36"x30"	21'-0"	-5.00	51.37	44.07	21.63
13	HP	14	EDGEWATER PARK	026	TG.	F.O.			N/A	N/A	N/A
13 Subtotal											
1	JA	01	JFK AIRPORT	006	DC/TG.	F.O.	12'-0"	+1.00	N/A	N/A	53.95
2	JA	02	79th ST. N. CONDUIT AVE.	26W-005	HYD. MAN	S.G./36"x24" S.G./36"x48"	5'-0"	-0.21	23.14	N/A	2.82
3	JA	03	123rd. PLACE & 150th AVE.	003	HYD.	S.G./36"x48"	16'-3"	+3.15	40.92	14.20	11.06
4	JA	09	LINDEN BLVD. & SPRINGFIELD BLVD.	005	DC.	F.O.	22'-0"	+27.77	N/A	N/A	8.30
5	JA	14	124th ST. & N.CONDUIT AVE.	003a	HYD.	S.G./24"x18"	30'-0"	-1.35	N/A	3.70	2.69
5 Subtotal											
1	NC(Q)	Q-01	RUST ST. & 56th ST.	077	HYD.	S.G./24"x24"	16'-0"	+1.00	15.14	8.07	4.92
2	NC(B)	B-01	JOHNSON AVE. W/O PORTER AVE.	015	HYD.	S.G./2ea.48"x36"		-4.68	157.45	44.53	36.57
3	NC(B)	B-04	KENT AVE. & TAYLOR ST.	014	HYD.	S.G./48"x36"	12'-3"	-8.57	41.08	47.68	40.91
4	NC(B)	B-05	DIVISION AVE. W/O KENT AVE.	013	HYD.	S.G./48"x36"	12'-0"	-4.59	52.86	20.17	17.27
5	NC(B)	B-06	S.5th AVE. W/O KENT AVE.	012	HYD.	S.G./36"x24"	16'-6"	-2.59	20.95	15.99	11.98

1	RK	01	B.106th ST. & BEACH CHANNEL DR.	029	MECH.	.G./2EA.40.75"x20	5'-6"	-6.00	103.98	13.89	10.99
1 Subtotal											
1	TI	09	LINDEN PL & 32nd AVE.	011	HYD.	F.O. 60"DIA.	15'-9"	+4.75	103.40	46.74	32.56
2	TI	10A	144th ST. & 7th AVE.	003	DC.	F.O./12"DIA.	5'-0"	+8.50	30.34	9.89	N/A
3	TI	13	15th DR. & WILLETS POINT BLVD.	023	HYD.	S.G./24"x18"	9'-0"	+24.65	12.78	3.87	2.81
4	TI	30	QUINCE AVE. & KISSENA BLVD.	010	MECH.	S.G./9"x33"	10'-0"	+1.88	5.45	5.27	2.10
5	TI	40	FRESH MEADOW LA. & PECK AVE.	010	HYD.	S.G./36"x28"	11'-6"	+19.05	24.31	7.56	5.00
6	TI	46	210 th ST. & LIE (N.S)	008	DC.	F.O./30"DIA.	12'-0"	+51.10	15.91	4.90	2.54
7	TI	47	218th ST & LIE (N.S)	008	DC.	F.O.	7'-6"	+69.40	12.48	0.80	0.61
8	TI	49	220th PL. & 46th AVE.	008	DC.	F.O./12"DIA.	6'-6"	+44.50	1.57	0.43	0.23
8 Subtotal											
1	WI(M)	02B	N/O E. 74th ST. & FDR DR.	003	HYD.	S.G./30"x24"			26.00	N/A	N/A
2	WI(M)	07	E.79th ST. & FDR DR.	008	HYD.	S.G./30"x24"	4'-4"	-2.14	22.27	11.98	8.00
3	WI(M)	23	E.106th ST. & FDR DR.	023	HYD.	S.G./30"x24"	15'-0"	-3.82	16.84	10.17	6.81
4	WI(M)	24	E.110th ST. & FDR DR.	024	HYD.	S.G./48"x36"	17'-0"	-4.57	38.28	14.63	10.70
5	WI(M)	38	E.135th ST. & E/O HARLEM R. DR.	038	HYD.	S.G./24"x24"	5'-0"	-4.30	15.36	13.38	10.63
6	WI(M)	45	W.147th ST. & IRT YARD	045	MAN.	S.G./18"x18"	7'-6"	-4.47	7.29	6.88	5.28
7	WI(M)	46	W.151st ST. & PLAYGROUND	046	HYD.	S.G./30"x24"	13'-0"	-3.50	19.36	11.37	10.20
8	WI(M)	51	N/S HARLEM R. DR. (W.167th ST.)	051	HYD.	S.G./18"x18"	3'-6"	+9.80	10.81	5.69	3.98
9	WI(M)	52	N/S HARLEM R. DR. (W.176th ST.)	052	HYD.	S.G./18"x18"	7'-0"	+43.88	8.32	6.20	3.94
10	WI(B)	53	BRUCKNER BLVD. & BROOK AVE.	068	HYD.	S.G./42"x42"	25'-0"	-7.42	248.67	62.39	52.64
11	WI(B)	58	MAJOR DEEGAN S/S 138th ST.	075	HYD.	S.G./30"x24"	11'-2"	-3.75	16.06	17.47	7.79
12	WI(B)	60	JEROME AVE. & McCOMBS DAM PARK	062	HYD.	S.G./42"x42"	9'-3"	-2.81	67.29	16.10	13.42
13	WI(B)	62	UNDERCLIFF & SEDGEWICK AVE.	060	HYD.	S.G./30"x24"	12'-8"	-3.83	16.36	36.24	22.66
14	WI(B)	67	E.192nd ST. W/O BAYLEY AVE.	056	HYD.	S.G./48"x36"	28'-0"	-3.55	57.85	49.05	36.38
15	WI(B)	68	E.149th ST. & EAST RIVER	072	HYD.	S.G./24"x24"	8'-0"	-3.00	13.6	9.14	8.27
15 Subtotal											
100 Total											

*Original count of 28 Key Regulators temporaily included PR-35W while PR-13E and PR-06W were out of service for repair.

Appendix 2.2.2: Table 2 - Sediments From Non-interceptor Assets 2020

Plant Name	Asset Type Cleaned	Tons Removed	Cubic Yards Removed
OH	Inffluent Thickener & sludge Well	16.0	10.32
WI	WI-D Battery Tank, Influent Channel, and FST #34, 36	4341.10	2800.71
Total		**4357.10**	**2811.03**

CSO Name	Asset Type Cleaned	Tons Removed	Cubic Yards Removed
Holding Tank	Paerdegat Facility	318.53	205.5
Total		**318.53**	**205.5**

Pump Station Name	Asset Type Cleaned	Tons Removed	Cubic Yards Removed
108th St	Wet Well & Bar Screens	61.46	39.65
2nd Ave	Wet Well & Bar Screens	13.13	8.47
Auburn Ave	Wet Well & Bar Screens	10.37	6.69
Ave M	Wet Well & Bar Screens	12.34	7.96
Bay Water	Wet Well & Bar Screens	13.31	8.59
Broad Channel	Wet Well & Bar Screens	12.69	8.19
Bush Terminal	Wet Well & Bar Screens	24.52	15.82
Cannon Ave	Wet Well & Bar Screens	12.43	8.02
Canterbury	Wet Well & Bar Screens	16.06	10.36
Howard Beach	Wet Well & Bar Screens	36.81	23.75
Mersereau Ave	Wet Well & Bar Screens	34.18	22.05
Nameoak	Wet Well & Bar Screens	29.73	19.18
Park Drive	Wet Well & Bar Screens	68.57	44.24
Richmond Ave Pump St.	Wet Well & Bar Screens	79.53	51.31
Rikers Island	Wet Well & Bar Screens	41.25	26.61
Roosevelt Main	Wet Well & Bar Screens	11.75	7.58
Rosedale	Wet Well & Bar Screens	35.7	23.03
Seagirt	Wet Well & Bar Screens	61.07	39.4
South Beach	Wet Well & Bar Screens	23.98	15.47
Victory Blvd	Wet Well & Bar Screens	11.11	7.17
West Shore Expressway	Wet Well & Bar Screens	6.90	4.45
Total		616.89	397.99

Appendix 2.2.3: Table 3 - Intercepting Sewer Inspections 2020 – Pipe Rating Index and Ranking

Pipeline segment ref:	O_M Rating	Structural Rating	O&M Rank	Structural Rank
26W_E_01	2.0	0.0	4	4
26W_E_12	2.0	0.0	4	4
26W_E_13	2.4	0.0	4	4
26W_E_14	3.0	0.0	3	4
26W_E_15	2.9	0.0	4	4
26W_E_16	2.5	0.0	4	4
26W_E_17	2.7	0.0	4	4
26W_E_18	2.5	0.0	4	4
26W_E_19	2.8	0.0	2	4
26W_E_20	3.7	0.0	1	4
26W_E_21	3.4	3.0	2	3
26W_E_22	3.3	3.0	2	3
26W_W_02	2.3	0.0	4	4
26W_W_03	2.2	0.0	4	4
26W_W_04	2.1	0.0	4	4
26W_W_05	2.2	0.0	4	4
26W_W_06	2.0	0.0	4	4
26W_W_07	2.0	0.0	4	4
26W_W_08	2.1	0.0	4	4
26W_W_09	2.0	0.0	4	4
26W_W_10	2.1	0.0	4	4
26W_W_11	2.1	0.0	4	4
26W_W_12	2.0	0.0	4	4
26W_W_13	2.1	0.0	4	4
26W_W_14	2.3	0.0	4	4
HP_E_001	2.0	3.0	4	3
HP_E_002	2.0	3.0	4	3
HP_E_003	2.0	0.0	4	4
HP_E_004	2.1	0.0	4	4
HP_E_005	2.1	0.0	4	4
HP_E_006	2.0	0.0	4	4
HP_E_007	2.4	0.0	4	4
HP_E_016	2.0	0.0	4	4
HP_E_017	2.0	0.0	4	4
HP_E_018	2.0	0.0	4	4
HP_E_019	2.0	0.0	4	4
HP_E_020	2.0	0.0	2	4
HP_E_021	2.0	0.0	2	4
HP_E_022	2.0	0.0	4	4
HP_E_024	2.0	0.0	4	4
HP_E_025	2.0	0.0	4	4
HP_E_026	2.0	0.0	4	4
HP_E_027	2.0	0.0	4	4
HP_E_028	2.0	0.0	4	4
HP_E_029A	2.0	0.0	4	4
HP_E_030	2.0	0.0	4	4

Pipeline segment ref:	O_M Rating	Structural Rating	O&M Rank	Structural Rank
HP_E_030A	2.0	0.0	4	4
HP_E_031A	2.0	0.0	4	4
HP_E_032	2.0	0.0	4	4
HP_E_032A	2.0	0.0	4	4
HP_E_033A	2.0	0.0	4	4
HP_E_034	2.0	0.0	4	4
HP_E_034A	2.0	0.0	4	4
HP_E_035A	2.0	0.0	4	4
HP_E_036	3.0	0.0	3	4
HP_E_036A	2.0	0.0	4	4
HP_E_037	3.0	0.0	3	4
HP_E_037A	2.6	0.0	4	4
HP_E_038	2.0	0.0	4	4
HP_E_038A	2.0	0.0	4	4
HP_E_039	2.0	0.0	4	4
HP_E_039A	2.0	2.0	4	4
HP_E_040	2.0	0.0	4	4
HP_E_040A	2.0	0.0	4	4
HP_E_041A	2.0	2.0	4	4
HP_E_042	2.6	0.0	4	4
HP_E_042A	2.3	0.0	4	4
HP_E_043	2.0	0.0	4	4
HP_E_043A	2.1	0.0	4	4
HP_E_044	2.0	0.0	4	4
HP_E_044A	2.0	0.0	4	4
HP_E_045A	2.0	0.0	4	4
HP_E_046A	2.0	0.0	4	4
HP_E_047	2.0	5.0	4	3
HP_E_047A	2.0	0.0	4	4
HP_E_049	2.6	0.0	4	4
HP_E_049A	2.6	5.0	4	3
HP_E_050	4.0	0.0	2	4
HP_E_050C	2.0	0.0	2	4
HP_E_051	3.4	0.0	2	4
HP_E_051A	2.0	0.0	4	4
HP_E_052	3.8	0.0	2	4
HP_E_052A	2.0	0.0	4	4
HP_E_053	3.1	0.0	2	4
HP_E_053A	2.0	0.0	4	4
HP_E_054	2.7	0.0	4	4
HP_E_054A	2.0	0.0	4	4
HP_E_055	2.7	0.0	2	4
HP_E_055A	2.0	0.0	4	4
HP_E_056	2.0	0.0	4	4
HP_E_056A	2.5	0.0	4	4
HP_E_058	2.0	0.0	4	4
HP_E_060	2.0	0.0	4	4

Pipeline segment ref:	O_M Rating	Structural Rating	O&M Rank	Structural Rank
HP_E_060A	2.0	0.0	4	4
HP_E_061	2.0	0.0	4	4
HP_E_061A	2.0	0.0	4	4
HP_E_062	2.0	0.0	4	4
HP_E_062A	2.0	0.0	4	4
HP_E_063	2.0	0.0	4	4
HP_E_063A	2.6	0.0	4	4
HP_E_064	2.0	0.0	4	4
HP_E_064A	2.0	0.0	4	4
HP_E_065	2.4	0.0	4	4
HP_E_065A	3.0	0.0	3	4
HP_E_066	2.3	0.0	4	4
HP_E_067	2.0	0.0	4	4
HP_E_067A	2.0	0.0	4	4
HP_E_068	2.0	0.0	4	4
HP_E_068B	2.0	0.0	4	4
HP_E_068B1	2.0	0.0	4	4
HP_E_068C	2.0	0.0	4	4
HP_E_069	2.0	0.0	4	4
HP_E_069A	2.0	0.0	4	4
HP_E_070	2.0	0.0	4	4
HP_E_070A	2.0	0.0	4	4
HP_E_073	2.0	3.0	4	3
HP_E_073_1	2.4	0.0	4	4
HP_E_073_2	2.3	3.0	4	3
HP_E_073_3	2.4	0.0	4	4
HP_E_073_4	2.0	0.0	4	4
HP_E_074	2.1	3.0	4	3
HP_E_075	2.2	0.0	4	4
HP_E_076	2.3	0.0	4	4
HP_E_077	2.3	0.0	4	4
HP_E_078	2.0	0.0	4	4
HP_E_079	2.0	0.0	4	4
HP_E_080	2.0	0.0	4	4
HP_E_081	2.3	0.0	4	4
HP_E_082	2.0	0.0	4	4
HP_E_083	2.2	0.0	4	4
HP_E_084	2.4	2.0	4	4
HP_E_085	2.3	3.0	4	3
HP_E_086	2.5	0.0	4	4
HP_E_087	2.2	0.0	4	4
HP_E_088	2.3	3.0	4	3
HP_E_089	2.4	0.0	4	4
HP_E_090	2.2	0.0	4	4
HP_E_091	2.6	0.0	4	4
HP_E_092	2.5	5.0	4	3
HP_E_093	2.6	0.0	4	4

Pipeline segment ref:	O_M Rating	Structural Rating	O&M Rank	Structural Rank
HP_E_094	2.2	0.0	4	4
HP_E_095	3.0	0.0	3	4
HP_E_096	2.5	0.0	4	4
HP_E_097	2.1	0.0	4	4
HP_E_098	2.0	3.0	4	3
HP_E_099	2.2	3.0	4	3
HP_E_100	2.0	0.0	4	4
HP_E_58A	2.0	0.0	4	4
HP_SE_1	2.2	0.0	4	4
HP_SE_2	2.0	0.0	4	4
HP_SE_3	2.0	5.0	4	3
HP_SE_4REG	2.0	5.0	4	3
HP_W_02	2.0	0.0	4	4
HP_W_03	2.0	0.0	4	4
HP_W_04	2.0	0.0	4	4
HP_W_05	2.0	0.0	4	4
HP_W_06	2.5	0.0	4	4
HP_W_07	2.0	0.0	4	4
HP_W_08	2.0	0.0	4	4
HP_W_09	2.1	0.0	4	4
HP_W_10	2.2	0.0	4	4
HP_W_11REG	2.8	0.0	2	4
NR_N_02	2.1	1.8	4	4
NR_N_05	2.1	2.0	4	4
NR_N_06	2.1	1.5	4	4
NR_N_07	2.0	1.2	4	4
NR_N_08	2.1	1.9	4	4
NR_N_09	2.0	2.2	4	4
NR_N_10	2.1	2.0	4	4
NR_N_11	2.0	2.0	4	4
NR_N_12	2.4	0.0	4	4
NR_N_13	2.3	0.0	4	4
NR_N_14	2.2	0.0	4	4
NR_N_15	2.0	0.0	4	4
NR_N_16	2.0	0.0	4	4
NR_N_18	2.0	0.0	4	4
NR_N_19	2.3	0.0	4	4
NR_N_20	2.7	0.0	4	4
NR_N_21	2.2	0.0	4	4
NR_N_22	2.0	0.0	4	4
NR_N_23	1.9	0.0	4	4
NR_N_24	2.0	0.0	4	4
NR_N_25	2.0	0.0	4	4
NR_N_26	2.3	0.0	4	4
NR_S_03	2.0	2.2	4	4
NR_S_04	2.0	2.0	4	4
NR_S_05	2.2	2.3	4	4

Pipeline segment ref:	O_M Rating	Structural Rating	O&M Rank	Structural Rank
NR_S_06	2.0	3.0	4	3
NR_S_08	2.3	0.0	4	4
NR_S_09	2.0	1.0	4	4
NR_S_10	2.0	2.0	4	4
NR_S_11	2.0	2.0	4	4
NR_S_12	2.0	1.5	4	4
NR_S_13	2.0	2.0	4	4
NR_S_14	2.0	0.0	4	4
NR_S_15	2.0	0.0	4	4
NR_S_16	2.0	0.0	4	4
NR_S_17	2.0	0.0	4	4
NR_S_18	2.0	0.0	4	4
NR_S_19	1.9	0.0	4	4
NR_S_20	2.0	0.0	4	4
NR_S_21	2.0	0.0	4	4
NR_S_22	2.6	5.0	4	3
NR_S_23	2.0	0.0	4	4
NR_S_24	2.0	0.0	4	4
NR_S_25	2.1	0.0	4	4
NR_S_26	2.1	0.0	4	4
NR_S_27	2.0	0.0	4	4
NR_S_28	2.0	5.0	4	3
NR_S_29	2.0	0.0	4	4
NR_S_2A	2.0	1.8	4	4
NR_S_30	2.0	0.0	4	4
NR_S_31	2.0	0.0	4	4
NR_S_32	2.2	0.0	4	4
NR_S_33	2.0	0.0	4	4
NR_S_34	2.0	0.0	4	4
NR_S_35	2.0	0.0	4	4
NR_S_36	2.3	0.0	4	4
NR_S_37	2.0	0.0	4	4
NR_S_38	2.5	0.0	4	4
OB_E_10	2.0	0.0	4	4
OB_E_11	2.2	0.0	4	4
OB_E_12	2.0	0.0	4	4
OB_E_13	2.0	0.0	4	4
OB_E_14	2.0	0.0	4	4
OB_E_15	2.0	0.0	4	4
OB_E_16	2.2	0.0	4	4
OB_E_17	2.0	0.0	4	4
OB_E_18	2.0	0.0	4	4
OB_E_19	2.0	0.0	4	4
OB_E_20	2.0	4.2	4	3
OB_E_21	2.0	0.0	4	4
OB_E_22	2.0	0.0	4	4
OB_E_23	2.0	0.0	4	4

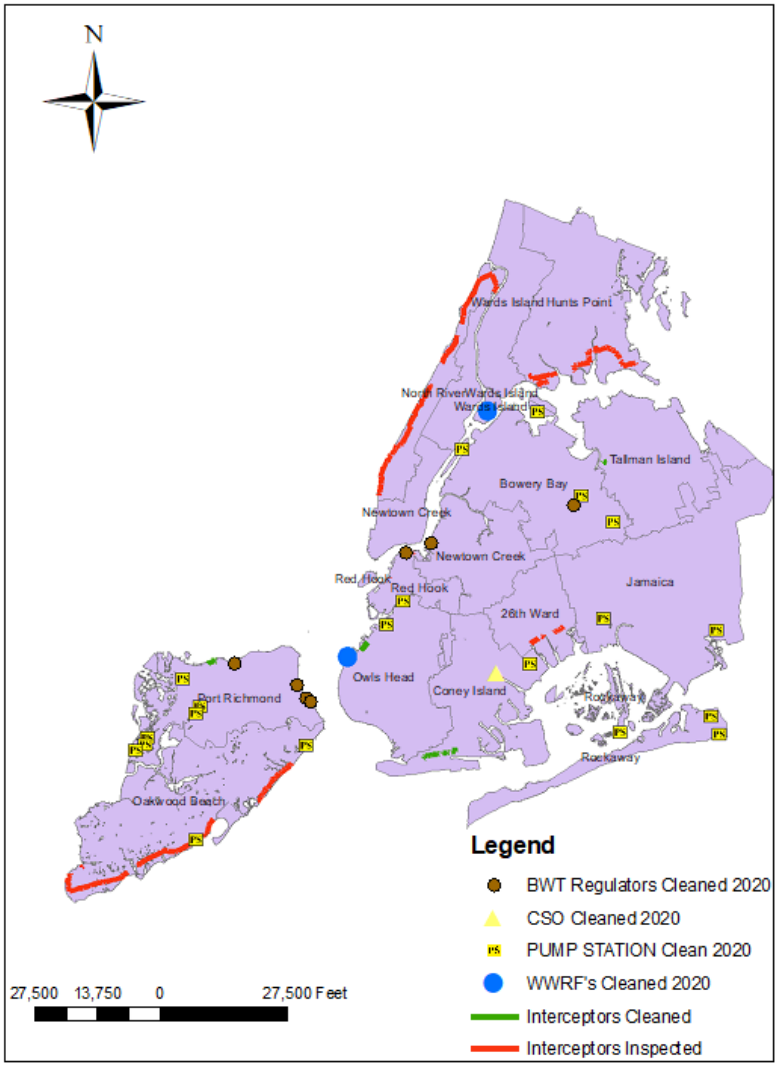
Pipeline segment ref:	O_M Rating	Structural Rating	O&M Rank	Structural Rank
OB_E_24	2.0	0.0	4	4
OB_E_25	2.0	0.0	4	4
OB_E_26	2.0	0.0	4	4
OB_E_27	2.1	0.0	4	4
OB_E_28	2.0	0.0	4	4
OB_E_29	2.0	0.0	4	4
OB_E_30	2.0	0.0	4	4
OB_E_31	2.0	0.0	4	4
OB_E_32	2.0	0.0	4	4
OB_E_33	2.0	0.0	4	4
OB_E_34	2.0	0.0	4	4
OB_E_35	2.0	0.0	4	4
OB_E_36	2.0	0.0	4	4
OB_W_13	2.0	0.0	4	4
OB_W_14	2.0	0.0	4	4
OB_W_15	2.0	0.0	4	4
OB_W_16	2.0	0.0	4	4
OB_W_17	2.0	0.0	4	4
OB_W_18	2.0	0.0	4	4
OB_W_19	2.0	0.0	4	4
OB_W_20	2.0	0.0	4	4
OB_W_21	2.0	0.0	4	4
OB_W_21A	2.2	0.0	4	4
OB_W_22	2.1	0.0	4	4
OB_W_23	2.0	0.0	4	4
OB_W_24	2.0	0.0	4	4
OB_W_25	2.3	0.0	4	4
OB_W_25A	2.0	0.0	4	4
OB_W_25B	2.0	0.0	4	4
OB_W_25C	2.0	0.0	4	4
OB_W_26	2.0	0.0	4	4
OB_W_27	2.0	0.0	4	4
OB_W_28	2.0	0.0	4	4
OB_W_28A	2.0	0.0	4	4
OB_W_29	2.0	2.0	4	4
OB_W_30	2.0	0.0	4	4
OB_W_31	2.0	0.0	4	4
OB_W_34	2.0	0.0	4	4
OB_W_35	2.0	0.0	4	4
OB_W_36	2.0	3.0	4	3
OB_W_38	2.1	0.0	4	4
OB_W_40	2.0	0.0	4	4
OB_W_41	2.0	0.0	4	4
OB_W_42	2.0	0.0	4	4
OB_W_44	2.0	2.0	4	4
OB_W_45	2.0	0.0	4	4
OB_W_46	2.0	0.0	4	4

Pipeline segment ref:	O_M Rating	Structural Rating	O&M Rank	Structural Rank
OB_W_47	2.1	0.0	4	4
OB_W_48	2.0	0.0	4	4
OB_W_51	2.0	2.0	4	4
OB_W_52	2.0	0.0	4	4
OB_W_53	2.0	0.0	4	4
OB_W_54	2.0	0.0	4	4
OB_W_55	2.1	0.0	4	4
OB_W_56	2.0	0.0	4	4
OB_W_57	2.0	0.0	4	4
OB_W_58	2.0	0.0	4	4
OB_W_59	2.1	0.0	4	4
OB_W_60	2.0	1.0	4	4
OB_W_61	2.4	0.0	4	4
OB_W_62	2.0	2.0	4	4
OB_W_64	2.0	0.0	4	4
OB_W_65	2.0	0.0	4	4
OB_W_66	2.0	0.0	4	4
OB_W_67	2.0	0.0	4	4
OB_W_68	2.1	0.0	4	4
OB_W_69	2.0	0.0	4	4
OB_W_70	2.0	0.0	4	4
OB_W_71	2.0	0.0	4	4
OB_W_72	2.3	0.0	4	4
OB_W_85	2.0	0.0	4	4
RH_04	2.1	0.0	4	4
RH_08	2.3	0.0	4	4
RH_12	2.0	0.0	4	4
RH_13	2.0	0.0	4	4
RH_19	2.2	0.0	4	4
RH_20	2.0	0.0	4	4
RH_21	2.0	0.0	4	4
RH_22	2.0	0.0	4	4
RH_23	2.0	0.0	4	4
RH_24	2.0	0.0	4	4
RH_25	2.0	0.0	4	4
RH_26	2.0	0.0	4	4
RH_27	2.0	0.0	4	4
RH_28	2.0	0.0	4	4
RH_29	2.0	0.0	4	4
RH_29A	2.0	0.0	4	4
RH_30	2.0	0.0	4	4
RH_31	2.0	0.0	4	4

Appendix 2.2.4: 2020 Asset Repair List

Asset Name	Date Inspected	Length (ft)	Defect	Structural Index	Comments	Final Decision	Corrective Action By
N/A					No assets found in need of repair		

Appendix 2.2.5: Map 1 - 2020 BMP Interceptors and Local Sewers CCTV/SONAR, Pump Stations, Regulators and Interceptors/Local Sewers Cleaned Map



Appendix 3:

- Appendix 3.1:Key Regulator Monitoring Report CY2020 Summary
- Appendix 3.2: Wet Weather Throttling Summary – CY2020
- Appendix 3.3: Estimation of Wet-Weather Capture

Appendix 3.1: KEY REGULATOR MONITORING REPORT CY2020 SUMMARY

CY2020 Key Regulator Monitoring Report

Regulator 26W-01	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Nov-20	1	11/1/20 3:30 PM	11/1/20 4:00 PM	0.50	72	80	127.5	11/1/20 4:15 PM	11/1/20 7:45 PM	135	131
	2	11/11/20 9:00 PM	11/11/20 9:00 PM	0.00*	104	104	127.5	11/11/20 9:15 PM	11/12/20 12:00 AM	135	129
	3	11/15/20 9:15 PM	11/15/20 10:00 PM	0.75	50	60	127.5	11/15/20 10:15 PM	11/15/20 11:45 PM	140	131

CY2020 Key Regulator Monitoring Report

Regulator 26W-02	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Feb-20	1	2/27/20 4:00 AM	2/27/20 5:15 AM	1.25	127	127	127.5	2/27/20 2:30 AM	2/27/20 3:45 AM	131	124
Mar-20	1	3/19/20 9:30 AM	3/19/20 11:45 AM	2.25	127	127	127.5	3/19/20 3:45 AM	3/19/20 9:30 AM	138	132
	2	3/23/20 11:00 PM	3/24/20 3:45 AM	4.75	122	122	127.5	3/23/20 1:30 PM	3/23/20 10:45 PM	138	132
May-20	1a	5/23/20 12:00 PM	5/23/20 12:00 PM	0.00*	113	113	127.5	5/23/20 12:15 PM	5/23/20 1:45 PM	135	130
	1b	5/23/20 2:00 PM	5/23/20 3:15 PM	1.25	96	118	127.5				
Jun-20	1a	6/29/20 7:15 PM	6/29/20 7:15 PM	0.00*	85	85	127.5	6/29/2020 7:30 PM	6/29/2020 8:45 PM	139	132
	1b	6/29/20 9:00 PM	6/29/20 10:45 PM	1.75	109	109	127.5				
Jul-20	1	7/10/20 7:30 PM	7/10/20 7:45 PM	0.25	126	126	127.5	7/10/2020 1:30 PM	7/10/2020 7:15 PM	143	130
	2	7/22/20 11:30 PM	7/23/20 4:45 AM	5.25	126	126	127.5	7/22/2020 7:30 PM	7/22/2020 11:15 PM	141	132
Sep-20	1	9/4/20 12:30 AM	9/4/20 4:00 AM	3.50	116	116	127.5	9/3/20 9:30 PM	9/4/20 12:00 AM	134	131
	2	9/10/20 9:30 PM	9/10/20 9:30 PM	0.00*	112	112	127.5	9/10/20 9:45 PM	9/11/20 12:15 AM	141	135
Nov-20	1	11/1/20 3:45 PM	11/1/20 4:00 PM	0.25	72	80	127.5	11/1/20 4:15 PM	11/1/20 7:45 PM	135	131
	2	11/11/20 9:00 PM	11/11/20 9:00 PM	0.00*	104	104	127.5	11/11/20 9:15 PM	11/12/20 12:00 AM	135	129
	3a	11/15/20 10:00 PM	11/15/20 10:00 PM	0.00*	60	60	127.5	11/15/20 10:15 PM	11/15/20 11:45 PM	140	131
	3b	11/16/20 12:00 AM	11/16/20 2:45 AM	2.75	126	126					
	4	11/26/20 9:30 AM	11/26/20 11:15 AM	1.75	127	127	127.5	11/26/20 5:45 AM	11/26/20 9:15 AM	139	132
	5	11/30/20 4:45 PM	11/30/20 5:00 PM	0.25	117	127	127.5	11/30/20 11:00 AM	11/30/20 4:30 PM	140	133
Dec-20	1	12/5/20 3:45 PM	12/5/20 4:45 PM	1.00	127	127	127.5	12/5/20 4:45 AM	12/5/20 3:30 PM	137	132

CY2020 Key Regulator Monitoring Report

Regulator BBH-02	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Oct-20	1a	10/13/20 8:15 AM	10/13/20 9:00 AM	0.75	161	165	300	N/A	N/A	N/A	N/A
	1b	10/13/20 3:00 PM	10/13/20 4:15 PM	1.25	146	152					

CY2020 Key Regulator Monitoring Report

Regulator BBH-06	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-20	1	1/25/20 1:45 PM	1/25/20 1:45 PM	0.00*	281	281	300	1/25/20 2:00 PM	1/25/20 6:15 PM	357	320
Feb-20	1	2/7/20 10:15 AM	2/7/20 11:00 AM	0.75	239	239	300	N/A	N/A	N/A	N/A
	2	2/10/20 3:45 PM	2/10/20 3:45 PM	0.00*	296	266	300	2/10/20 4:00 PM	2/10/20 5:30 PM	312	308
	3	2/11/20 7:45 AM	2/11/20 7:45 AM	0.00*	266	266	300	2/11/20 8:00 AM	2/11/20 9:00 AM	316	311
	4	2/13/20 12:45 AM	2/13/20 12:45 AM	0.00*	297	297	300	2/13/20 1:00 AM	2/13/20 2:45 AM	318	311
	5	2/27/20 1:45 AM	2/27/20 1:45 AM	0.00*	289	289	300	2/27/20 2:00 AM	2/27/20 6:00 AM	315	311
Mar-20	1	3/3/20 11:15 PM	3/3/20 11:15 PM	0.00*	261	261	300	3/3/20 11:30 PM	3/4/20 12:15 AM	315	309
Apr-20	1	4/21/20 3:15 PM	4/21/20 3:15 PM	0.00*	261	261	300	4/21/20 3:30 PM	4/22/20 5:00 PM	333	319
	2	4/30/20 8:45 AM	4/30/20 8:45 AM	0.00*	183	183	284	4/30/20 9:00 AM	11/3/00 12:00 AM	308	298
May-20	1	5/23/20 11:15 AM	5/23/20 11:30 AM	0.25	88	155	300	5/23/20 11:45 AM	5/23/20 3:30 PM	324	307
Jul-20	1	7/24/20 10:30 AM	7/24/20 10:45 AM	0.25	104	189	284	7/24/2020 11:00 AM	7/24/2020 1:30 PM	325	314
	2	7/31/20 2:15 AM	7/31/20 2:45 AM	0.50	116	283	284	7/31/2020 3:00 AM	7/31/2020 4:45 AM	350	324
Aug-20	1	8/4/20 5:15 AM	8/4/20 6:15 AM	1.00	61	117	284	8/4/20 7:00 AM	8/4/20 7:30 AM	293	289
	2	8/12/20 4:00 PM	8/12/20 4:45 PM	0.75	220	299	284	8/12/20 4:15 PM	8/12/20 8:00 PM	335	309
	3	8/17/20 9:30 PM	8/17/20 9:30 PM	0.00*	217	217	284	8/17/20 9:45 PM	8/18/20 12:45 AM	343	318
	4	8/25/20 7:00 PM	8/25/20 7:15 PM	0.25	220	299	284	8/25/20 7:15 PM	8/25/20 9:30 PM	323	312
Sep-20	1	9/30/20 2:00 AM	9/30/20 2:00 AM	0.00*	293	293	300	9/30/20 2:15 AM	9/30/20 7:30 AM	330	309
Oct-20	1	10/16/20 11:45 AM	10/16/20 11:45 AM	0.00*	279	279	300	10/16/20 12:00 PM	10/16/20 6:30 PM	320	313
Nov-20	1	11/15/20 9:00 PM	11/15/20 9:30 PM	0.50	132	132	284	11/15/20 10:45 PM	11/16/20 1:00 AM	337	310
	2	11/30/20 11:15 AM	11/30/20 11:15 AM	0.00*	169	169	300	11/30/20 11:30 AM	11/30/20 5:30 PM	352	328
Dec-20	1	12/5/20 5:15 AM	12/5/20 5:15 AM	0.00*	259	259	300	12/5/20 5:30 AM	12/5/20 1:30 PM	337	314

CY2020 Key Regulator Monitoring Report

Regulator BBL-04	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Feb-20	1	2/6/20 1:45 AM	2/6/20 2:15 AM	0.75	138	277	300	2/6/20 2:30 AM	2/6/20 5:45 AM	324	317
	2	2/27/20 1:15 AM	2/27/20 1:45 AM	0.50	150	289	300	2/27/20 2:00 AM	2/27/20 6:00 AM	315	311
Mar-20	1	3/3/20 10:45 PM	3/3/20 11:15 PM	0.50	148	261	300	3/3/20 11:30 PM	3/4/20 12:15 AM	315	309
	2	3/13/20 7:30 AM	3/13/20 8:00 AM	0.50	265	265	300	3/13/20 10:00 AM	3/13/20 10:00 AM	300	300
Apr-20	1	4/8/20 5:30 AM	4/8/20 5:45 AM	0.25	265	265	300	N/A	N/A	N/A	N/A
	2	4/9/20 2:30 PM	4/9/20 2:30 PM	0.00*	260	260	300	4/9/20 3:00 PM	4/9/20 3:45 PM	317	310
	3	4/21/20 3:15 PM	4/21/20 3:15 PM	0.00*	261	261	300	4/21/20 3:30 PM	4/22/20 5:00 PM	333	319
	4	4/30/20 9:45 PM	4/30/20 10:00 PM	0.25	174	208	284	4/30/20 10:15 PM	4/30/20 11:45 PM	360	325
Jun-20	1	6/3/20 4:45 AM	6/3/20 5:15 AM	0.50	181	210	300	N/A	N/A	N/A	N/A
	2	6/5/20 1:30 AM	6/5/20 1:45 AM	0.25	229	259	300	N/A	N/A	N/A	N/A
	3	6/28/20 7:45 PM	6/28/20 8:15 PM	0.50	162	193	300	N/A	N/A	N/A	N/A
	4a	6/29/20 7:00 PM	6/29/20 7:30 PM	0.50	243	277	300	6/29/2020 8:00 PM	6/29/2020 8:00 PM	310	310
	4b	6/29/20 8:30 PM	6/29/20 9:00 PM	0.50	277	283	300				
Jul-20	1	7/11/20 7:30 PM	7/11/20 8:00 PM	0.50	128	159	300	7/10/2020 1:45 PM	7/10/2020 11: PM	338	318
	2a	7/22/20 1:45 AM	7/22/20 2:15 AM	0.50	99	103	284	7/22/2020 7:45 PM	7/22/2020 11:30 PM	361	312
	2b	7/22/20 7:15 PM	7/22/20 7:30 PM	0.25	143	143	284				
	3	7/31/20 2:15 AM	7/31/20 2:45 AM	0.50	116	283	284	7/31/2020 3:00 AM	7/31/2020 4:45 AM	350	324
	4	7/31/20 7:15 AM	7/31/20 7:45 AM	0.50	140	257	284	7/31/2020 8:00 AM	7/31/2020 8:15 AM	311	298
Aug-20	1a	8/13/20 11:00 AM	8/13/20 11:00 AM	0.00*	198	198	284	8/13/20 11:15 AM	8/13/20 11:45 AM	298	289
	1b	8/13/20 12:00 PM	8/13/20 12:30 PM	0.50	280	280	284				
	2a	8/17/20 9:15 PM	8/17/20 9:30 PM	0.25	152	217	284	8/17/20 9:45 PM	8/18/20 12:45 AM	343	318
	2b	8/18/20 4:00 AM	8/18/20 5:30 AM	1.50	130	288	284				
	3	8/19/20 10:30 AM	8/19/20 11:45 AM	1.25	100	281	284	8/19/20 12:15 PM	8/16/20 12:30 PM	285	285
	4	8/25/20 7:00 PM	8/25/20 7:00 PM	0.00*	220	220	284	8/25/20 7:15 PM	8/25/20 9:30 PM	323	312
	5	8/27/20 8:30 PM	8/27/20 8:30 PM	0.00*	128	128	284	8/27/20 8:45 PM	8/28/20 12:00 AM	331	308
Sep-20	1	9/1/20 5:45 AM	9/1/20 6:15 AM	0.50	74	106	300	N/A	N/A	N/A	N/A
	2	9/3/20 9:30 PM	9/3/20 9:30 PM	0.00*	272	272	300	9/3/20 9:45 PM	9/4/20 12:45 AM	338	325
	3	9/10/20 5:45 AM	9/10/20 6:15 AM	0.50	92	192	300	9/10/20 6:30 AM	9/10/20 11:30 AM	335	311
	4	9/10/20 9:00 PM	9/10/20 9:15 PM	0.25	178	203	300	9/10/20 9:30 PM	9/11/20 12:45 AM	334	308
	5a	9/29/20 10:00 PM	9/29/20 10:30 PM	0.50	177	195					
	5b	9/29/20 11:00 PM	9/30/20 12:15 AM	1.25	232	284	300	9/30/20 2:15 AM	9/30/20 7:00 AM	330	309
	5c	9/30/20 2:00 AM	9/30/20 2:00 AM	0.00*	293	293					
Oct-20	1	10/16/20 11:15 AM	10/16/20 11:45 AM	0.50	200	279	300	10/16/20 12:00 PM	10/16/20 6:30 PM	320	313
Nov-20	1	11/11/20 7:45 PM	11/11/20 7:45 PM	0.00*	221	221	284	11/11/20 8:00 PM	11/12/20 1:00 AM	324	307
	2	11/15/20 9:00 PM	11/15/20 10:15 PM	1.25	132	170	284	11/15/20 10:45 PM	11/16/20 1:00 AM	337	310
	3	11/23/20 5:45 AM	11/23/20 6:30 AM	0.75	89	109	300	11/23/20 6:45 AM	11/23/20 10:45 AM	327	315
	4	11/26/20 5:30 AM	11/26/20 5:30 AM	0.00*	72	72	300	11/26/20 5:45 AM	11/26/20 9:30 AM	328	315
	5a	11/30/20 10:45 AM	11/30/20 11:15 AM	0.50	105	169	300	11/30/20 11:30 AM	11/30/20 5:30 PM	352	328
	5b	11/30/20 6:00 PM	11/30/20 6:30 PM	0.50	287	287					
Dec-20	1	12/5/20 5:00 AM	12/5/20 5:15 AM	0.25	214	259	300	12/5/20 5:30 AM	12/5/20 1:30 PM	334	314
	2	12/24/20 11:30 PM	12/25/20 12:15 AM	0.75	119	275	300	12/25/20 12:30 AM	2/25/20 11:30 AM	369	317

CY2020 Key Regulator Monitoring Report

Regulator BBL-22	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Mar-20	1	3/28/20 7:30 PM	3/28/20 7:45 PM	0.25	187	250	300	3/28/20 8:00 PM	3/28/20 9:15 PM	314	308
Apr-20	1	4/21/20 2:45 PM	4/21/20 3:15 PM	0.50	243	261	300	4/21/20 3:30 PM	4/22/20 5:00 PM	333	319
Jun-20	1	6/29/20 7:00 PM	6/29/20 7:30 PM	0.50	243	277	300	6/29/2020 8:00 PM	6/29/2020 8:00 PM	310	310
Aug-20	1	8/13/20 10:45 AM	8/13/20 11:00 AM	0.25	114	198	284	8/13/20 11:15 AM	8/13/20 11:45 AM	298	289
	2	8/25/20 6:45 PM	8/25/20 7:00 PM	0.25	141	220	284	8/25/20 7:15 PM	8/25/20 9:30 PM	323	312
	3	8/27/20 8:30 PM	8/27/20 8:30 PM	0.00*	128	128	284	8/27/20 8:45 PM	8/28/20 12:00 AM	331	308
Sep-20	1	9/10/20 8:45 PM	9/10/20 9:15 PM	0.50	123	203	300	9/10/20 9:30 PM	9/11/20 12:45 AM	334	308

CY2020 Key Regulator Monitoring Report

Regulator HP-05	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-20	1	1/25/20 2:45 PM	1/25/20 6:45 PM	4.00	277	393	400	N/A	N/A	N/A	N/A
Feb-20	1	2/27/20 6:15 AM	2/27/20 7:45 AM	1.50	307	307	400	N/A	N/A	N/A	N/A
Apr-20	1a	4/13/20 7:45 AM	4/13/20 8:00 AM	0.25	384	397	400	4/13/20 8:30 AM	4/13/20 12:00 PM	416	410
	1b	4/13/20 12:15 PM	4/13/20 12:15 PM	0.00*	387	387					
	1c	4/13/20 8:00 PM	4/13/20 10:45 PM	2.75	264	264	400	4/13/20 3:15 PM	4/13/20 4:45 PM	415	409
	2	4/30/20 9:30 AM	4/30/20 12:45 PM	3.25	370	396	400	N/A	N/A	N/A	N/A
May-20	1	5/9/20 4:30 AM	5/9/20 6:00 AM	1.50	253	253	400	N/A	N/A	N/A	N/A
	2	5/23/20 2:15 PM	5/23/20 6:15 PM	4.00	309	309	400	N/A	N/A	N/A	N/A
Jun-20	1	6/6/20 3:30 PM	6/6/20 5:45 PM	2.25	299	299	400	N/A	N/A	N/A	N/A
Jul-20	1	7/6/20 6:30 PM	7/6/20 7:30 PM	1.00	358	358	400	N/A	N/A	N/A	N/A
	2	7/10/20 8:00 PM	7/10/20 9:45 PM	1.75	392	392	400	7/10/2020 2:30 PM	7/10/2020 7:45 PM	425	411
	3	7/31/20 3:00 AM	7/31/20 5:00 AM	2.00	388	399	400	7/31/2020 2:45 AM	7/31/2020 2:45 AM	400	400
Aug-20	1	8/18/20 1:45 AM	8/18/20 4:15 AM	2.50	325	325	330	8/17/20 9:30 PM	8/18/20 1:30 AM	355	332
	2	8/19/20 3:30 PM	8/19/20 5:15 PM	1.75	319	319	330	8/19/20 10:45 AM	8/19/20 3:00 PM	355	331
	3	8/25/20 9:30 PM	8/25/20 10:45 PM	1.25	317	317	330	8/25/20 6:45 PM	8/25/20 9:15 PM	343	330
	4	8/27/20 11:15 PM	8/28/20 12:00 AM	0.75	314	314	400	8/27/20 9:15 PM	8/27/20 10:15 PM	451	421
Sep-20	1	9/10/20 9:15 AM	9/10/20 9:15 AM	0.00*	354	354	400	9/10/20 9:30 AM	9/10/20 10:45 AM	418	386
	2	9/30/20 3:45 AM	9/30/20 6:30 AM	1.75	397	327	400	9/30/20 2:30 AM	9/30/20 3:30 AM	415	408
Oct-20	1	10/12/20 12:30 PM	10/12/20 1:00 PM	0.50	373	373	400	N/A	N/A	N/A	N/A
	2	10/16/20 3:15 PM	10/16/20 3:45 PM	0.50	372	372	400	10/16/20 12:00 PM	10/16/20 3:00 PM	424	394
	3	10/29/20 3:45 PM	10/29/20 6:30 PM	2.75	382	382	400	10/29/20 11:45 AM	10/29/20 3:30 PM	418	401
Nov-20	1	11/1/20 5:00 PM	11/1/20 6:00 PM	1.00	362	362	400	N/A	N/A	N/A	N/A
	2	11/23/20 8:00 AM	11/23/20 9:00 AM	1.00	367	367	400	N/A	N/A	N/A	N/A
	3a	11/26/20 6:30 AM	11/26/20 6:30 AM	0.00*	290	290	400	11/26/20 6:45 AM	11/26/20 8:15 AM	415	400
	3b	11/26/20 8:30 AM	11/26/20 8:30 AM	0.00*	399	399					
	4a	11/30/20 12:15 PM	11/30/20 12:15 PM	0.00*	317	317	400	11/30/20 12:30 PM	11/30/20 3:45 PM	447	416
	4b	11/30/20 4:00 PM	11/30/20 4:45 PM	0.75	393	393					
	4c	11/30/20 5:00 PM	11/30/20 8:30 PM	3.50	321	337					

CY2020 Key Regulator Monitoring Report

Regulator HP-10	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-20	1	1/25/20 2:45 PM	1/25/20 5:15 PM	2.50	277	393	400	N/A	N/A	N/A	N/A
Apr-20	1	4/13/20 7:45 AM	4/13/20 8:00 AM	0.25	384	397	400	4/13/20 8:30 AM	4/13/20 12:00 PM	416	410
	2	4/30/20 9:15 AM	4/30/20 9:45 AM	0.50	367	396	400	N/A	N/A	N/A	N/A
May-20	1	5/8/20 9:30 PM	5/8/20 10:00 PM	0.50	256.00	278	400	N/A	N/A	N/A	N/A
Jun-20	1	6/6/20 3:15 PM	6/6/20 4:30 PM	1.25	306	306	400	N/A	N/A	N/A	N/A
Jul-20	1	7/22/20 7:45 PM	7/22/20 9:15 PM	1.50	260	358	400	N/A	N/A	N/A	N/A
	2a	7/31/20 2:30 AM	7/31/20 2:30 AM	0.00*	212	212	400	7/31/2020 2:45 AM	7/31/2020 2:45 AM	400	400
	2b	7/31/20 3:00 AM	7/31/20 3:30 AM	0.50	388	399	400				
Sep-20	1	9/30/20 2:15 AM	9/30/20 2:15 AM	0.00*	370	370	400	9/30/20 2:30 AM	9/30/20 3:30 AM	415	408
Nov-20	1	11/30/20 12:00 PM	11/30/20 12:15 PM	0.25	314	317	400	11/30/20 12:30 PM	11/30/20 3:45 PM	447	416

CY2020 Key Regulator Monitoring Report

Regulator HP-13	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-20	1	1/25/20 2:15 PM	1/25/20 9:45 PM	7.50	318	393	400	N/A	N/A	N/A	N/A
Feb-20	1	2/6/20 2:30 AM	2/6/20 4:30 AM	2.00	183	357	400	N/A	N/A	N/A	N/A
	2	2/10/20 5:15 PM	2/10/20 5:45 PM	0.50	325	325	400	N/A	N/A	N/A	N/A
	3	2/11/20 7:45 AM	2/11/20 9:00 AM	1.25	295	303	400	N/A	N/A	N/A	N/A
Mar-20	1	3/3/20 11:15 PM	3/4/20 12:30 AM	1.25	278	284	400	N/A	N/A	N/A	N/A
	2	3/13/20 8:00 AM	3/13/20 11:30 AM	3.50	247	247	400	N/A	N/A	N/A	N/A
	3	3/19/20 3:45 AM	3/19/20 5:30 AM	1.75	350	393	400	3/19/20 5:45 AM	3/19/20 7:30 AM	416	411
	4	3/23/20 8:15 PM	3/23/20 10:00 PM	1.75	399	399	400	3/23/20 3:30 PM	3/23/20 8:00 PM	418	410
Apr-20	1	4/8/20 5:45 AM	4/8/20 7:00 AM	1.25	195	230	400	N/A	N/A	N/A	N/A
	2a	4/13/20 7:45 AM	4/13/20 8:00 AM	0.25	384	397	400	4/13/20 8:30 AM	4/13/20 12:00 PM	416	410
	2b	4/13/20 12:15 PM	4/13/20 1:00 PM	0.75	387	358					
	3	4/21/20 3:45 PM	4/21/20 5:00 PM	1.25	284	298	400	N/A	N/A	N/A	N/A
	4a	4/30/20 9:15 AM	4/30/20 11:15 AM	2.00	367	367	400	N/A	N/A	N/A	N/A
	4b	4/30/20 10:30 PM	4/30/20 11:30 PM	1.00	342	344					
May-20	1a	5/23/20 1:15 PM	5/23/20 4:00 PM	0.75	352	352	400	N/A	N/A	N/A	N/A
	1b	5/23/20 5:15 PM	5/23/20 6:00 PM	0.75	278	293	400	N/A	N/A	N/A	N/A
Jun-20	1a	6/5/20 7:15 PM	6/5/20 8:45 PM	1.50	168	168	400	N/A	N/A	N/A	N/A
	1b	6/6/20 3:15 PM	6/6/20 5:45 PM	2.25	306	283	400				
Jul-20	1	7/3/20 5:45 PM	7/3/20 7:00 PM	1.25	254	301	400	N/A	N/A	N/A	N/A
	2	7/6/20 5:30 PM	7/6/20 7:45 PM	2.25	239	366	400	N/A	N/A	N/A	N/A
	3	7/22/20 8:00 PM	7/22/20 9:30 PM	1.50	274	358	400	N/A	N/A	N/A	N/A
	4a	7/31/20 2:30 AM	7/31/20 2:30 AM	0.00*	212	212	400	7/31/2020 2:45 AM	7/31/2020 2:45 AM	400	400
	4b	7/31/20 3:00 AM	7/31/20 5:15 AM	2.25	388	399	400				
Aug-20	1	8/7/20 7:30 AM	8/7/20 8:30 AM	1.00	270	281	400	N/A	N/A	N/A	N/A
	2	8/13/20 12:45 PM	8/13/20 2:00 PM	1.25	229	277	400	N/A	N/A	N/A	N/A
	3a	8/18/20 1:45 AM	8/18/20 2:45 AM	1.00	325	325	330	8/17/20 9:30 PM	8/18/20 1:30 AM	355	332
	3b	8/18/20 4:30 AM	8/18/20 5:45 AM	1.25	244	276	330				
	4	8/19/20 3:15 PM	8/19/20 3:45 PM	0.50	328	328	330	8/19/20 10:45 AM	8/19/20 3:00 PM	355	331
	5	8/27/20 11:15 PM	8/27/20 11:30 PM	1.00	314	314	400	8/27/20 9:15 PM	8/27/20 10:15 PM	451	421
Sep-20	1	9/3/20 9:45 PM	9/3/20 10:15 PM	0.50	292	389	400	9/3/20 10:30 PM	9/4/20 12:00 AM	432	431
	2	9/10/20 8:45 AM	9/10/20 9:15 AM	0.50	356	356	400	9/10/20 9:30 AM	9/10/20 10:45 AM	418	386
	3a	9/30/20 2:15 AM	9/30/20 2:15 AM	0.00*	370	370	400	9/30/20 2:30 AM	9/30/20 3:30 AM	415	408
	3b	9/30/20 3:45 AM	9/30/20 6:45 AM	3.00	397	397					
Oct-20	1	10/12/20 11:00 AM	10/12/20 2:00 PM	3.00	361	389	400	N/A	N/A	N/A	N/A
	2	10/16/20 3:15 PM	10/16/20 6:15 PM	3.00	372	372	400	10/16/20 12:00 PM	10/16/20 3:00 PM	424	394
Nov-20	1	11/1/20 3:45 PM	11/1/20 5:45 PM	2.00	225	375	400	N/A	N/A	N/A	N/A
	2a	11/23/20 8:00 AM	11/23/20 10:00 AM	2.00	367	367	400	N/A	N/A	N/A	N/A
	2b	11/23/20 10:15 AM	11/23/20 11:00 AM	0.75	273	277					
	3	11/26/20 6:00 AM	11/26/20 6:30 AM	0.50	195	290	400	11/26/20 6:45 AM	11/26/20 8:15 AM	415	400
	4	11/30/20 6:15 PM	11/30/20 8:15 PM	2.00	293	337	400	11/30/20 12:30 PM	11/30/20 3:45 PM	447	416
Dec-20	1a	12/25/20 12:30 AM	12/25/20 2:15 AM	1.75	326	383	400	12/25/20 3:00 AM	12/25/20 3:45 AM	413	408
	1b	12/25/20 4:00 AM	12/25/20 4:45 AM	0.75	392	392					
	2	12/31/20 7:30 AM	12/31/20 9:45 AM	2.25	184	380	400	N/A	N/A	N/A	N/A

CY2020 Key Regulator Monitoring Report

Regulator JA-03	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-20	1	1/25/20 3:30 PM	1/25/20 4:30 PM	1.00	188	199	200	N/A	N/A	N/A	N/A
Mar-20	1	3/19/20 5:45 AM	3/19/20 6:30 AM	0.75	191	193	200	N/A	N/A	N/A	N/A
May-20	1	5/23/20 11:30 AM	5/23/20 12:15 PM	0.75	84	134	200	N/A	N/A	N/A	N/A
Jul-20	1	7/10/20 2:00 PM	7/10/20 2:15 PM	0.25	189	189	200	7/10/2020 2:30 PM	7/10/2020 6:30 PM	219	210
	2	7/22/20 8:00 PM	7/22/20 9:00 PM	1.00	144	198	200	7/22/2020 9:15 PM	7/22/2020 10:15 PM	218	215
	3	7/24/20 11:15 AM	7/24/20 11:30 AM	0.25	103	144	200	7/24/2020 11:45 AM	7/31/2020 2:15 PM	211	205
	4	7/31/20 2:15 AM	7/31/20 2:30 AM	0.25	122	139	150	7/31/2020 2:45 AM	7/31/2020 5:45 AM	197	177
Aug-20	1	8/4/20 5:30 AM	8/4/20 6:00 AM	0.50	83	106	200	N/A	N/A	N/A	N/A
	2	8/17/20 10:00 PM	8/17/20 10:30 PM	0.50	124	151	200	N/A	N/A	N/A	N/A
	3	8/27/20 8:45 PM	8/27/20 9:30 PM	0.75	78	140	200	8/27/20 8:00 PM	8/27/20 8:00 PM	202	202
Sep-20	1	9/3/20 9:45 PM	9/3/20 10:30 PM	0.75	156	191	200	N/A	N/A	N/A	N/A
	2	9/10/20 9:15 AM	9/10/20 9:30 AM	0.25	192	199	200	9/10/20 9:45 AM	9/10/20 9:45 AM	200	200
	3	9/10/20 10:00 PM	9/10/20 11:00 PM	1.00	122	171	200	N/A	N/A	N/A	N/A
	4	9/30/20 4:30 AM	9/30/20 5:00 AM	0.50	85	85	200	N/A	N/A	N/A	N/A
Oct-20	1	10/16/20 12:00 PM	10/16/20 1:00 PM	1.00	142	198	200	10/16/20 1:15 PM	10/16/20 4:45 PM	220	212
Nov-20	1	11/15/20 9:30 PM	11/15/20 10:00 PM	0.50	106	106	200	N/A	N/A	N/A	N/A
	2	11/30/20 11:30 AM	11/30/20 12:00 PM	0.50	113	143	200	11/30/20 1:30 PM	11/30/20 4:00 PM	216	209

CY2020 Key Regulator Monitoring Report

Regulator NCB-01	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Feb-20	1	2/27/20 2:00 AM	2/27/20 3:00 AM	1.00	628	670	700	N/A	N/A	N/A	N/A
Apr-20	1a	4/13/20 5:45 AM	4/13/20 5:45 AM	0.00*	600	600	700	4/13/20 6:00 AM	4/13/20 6:00 PM	723	723
								4/13/20 7:15 AM	4/13/20 12:30 PM	770	753
	1b	4/13/20 2:30 PM	4/13/20 3:15 PM	0.75	588	693		4/13/20 3:45 PM	4/13/20 4:00 PM	715	708
	2	4/21/20 4:00 PM	4/21/20 4:15 PM	0.25	659	659	700	N/A	N/A	N/A	N/A
May-20	1	5/23/20 12:00 PM	5/23/20 1:30 PM	1.50	445	689	700	N/A	N/A	N/A	N/A
Jun-20	1	6/28/20 7:45 PM	6/28/20 7:45 PM	0.00*	401	401	700	N/A	N/A	N/A	N/A
	2a	6/29/20 7:00 PM	6/29/20 7:15 PM	0.25	277	388	700	6/29/2020 7:30 PM	6/29/2020 7:30 PM	725	725
	2b	6/29/20 7:45 PM	6/29/20 8:15 PM	0.50	647	673	700				
	3	6/30/20 1:45 PM	6/30/20 2:15 PM	0.50	371	632	700	N/A	N/A	N/A	N/A
Jul-20	1	7/24/20 11:00 AM	7/24/20 12:00 PM	1.00	398	682	700	N/A	N/A	N/A	N/A
	2	7/31/20 2:00 AM	7/31/20 2:00 AM	0.00*	256	256	700	7/31/2020 2:15 AM	7/31/2020 4:00 AM	770	750
Aug-20	1	8/3/20 9:45 PM	8/3/20 10:00 PM	0.25	264	542	700	8/3/20 10:15 PM	8/3/20 10:45 PM	812	772
	2	8/4/20 12:00 PM	8/4/20 12:00 PM	0.25	277	277	700	8/4/20 12:15 PM	8/4/20 2:15 PM	820	776
Sep-20	1a	9/10/20 5:45 AM	9/10/20 6:30 AM	0.75	302	688	700	9/10/20 9:15 AM	9/10/20 11:00 AM	763	741
	1b	9/10/20 8:30 AM	9/10/20 9:00 AM	0.50	505	614					
	1c	9/10/20 9:15 PM	9/10/20 9:15 PM	0.00*	630	671		9/10/20 9:30 PM	9/10/20 11:00 PM	753	724
	2	9/30/20 2:15 AM	9/30/20 2:15 AM	0.00*	505	505	700	9/30/20 2:30 AM	9/30/20 5:15 AM	787	768
Oct-20	1	10/16/20 11:30 AM	10/16/20 11:30 AM	0.00*	422	422	700	10/16/20 11:45 AM	10/16/20 4:00 PM	774	740
	2	10/29/20 11:00 AM	10/29/20 11:15 AM	0.25	515	665	700	10/29/20 11:30 AM	10/29/20 4:15 PM	778	740
Nov-20	1	11/1/20 3:30 PM	11/1/20 4:15 PM	0.75	321	440	700	11/1/20 4:45 PM	11/1/20 5:00 PM	723	713
	2	11/11/20 8:15 PM	11/11/20 9:15 PM	1.00	437	614	700	11/11/20 9:30 PM	11/11/20 10:45 PM	789	771
	3	11/15/20 9:00 PM	11/15/20 9:00 PM	0.00*	205	205	700	11/15/20 9:15 PM	11/15/20 10:30 PM	722	630
	4	11/26/20 6:00 AM	11/26/20 6:00 AM	0.00*	400	400	700	11/26/20 6:15 AM	11/26/20 9:30 AM	825	763
	5	11/30/20 11:00 AM	11/30/20 11:00 AM	0.00*	325	325	700	11/30/20 11:15 AM	11/30/20 3:15 PM	828	748
Dec-20	1	12/5/20 5:15 AM	12/5/20 5:30 AM	0.25	563	670	700	12/5/20 5:45 AM	12/5/20 8:45 AM	797	767

CY2020 Key Regulator Monitoring Report

Regulator NCB-04	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Feb-20	1	2/10/20 3:15 PM	2/27/20 5:00 PM	1.75	535	478	700	N/A	N/A	N/A	N/A
	2	2/27/20 2:15 AM	2/27/20 5:00 AM	2.75	670	670	700	N/A	N/A	N/A	N/A
Mar-20	1	3/19/20 8:15 AM	3/19/20 9:45 AM	1.50	513	513	700	3/19/20 4:30 AM	3/19/20 8:15 AM	781	749
	2a	3/23/20 3:00 PM	3/23/20 3:15 PM	0.25	682	696	700	3/23/20 3:30 PM	3/23/20 9:00 PM	807	778
	2b	3/23/20 9:45 PM	3/23/20 10:15 PM	0.50	661	661	700				
Apr-20	1a	4/13/20 6:15 AM	4/13/20 6:45 AM	0.50	665	665	700	4/13/20 6:00 AM	4/13/20 6:00 PM	723	723
	1b	4/13/20 3:15 PM	4/13/20 3:15 PM	0.00*	693	693	700	4/13/20 7:15 AM	4/13/20 12:30 PM	770	753
	1c	4/13/20 4:00 PM	4/13/20 5:15 PM	1.25	659	659	700	4/13/20 3:45 PM	4/13/20 4:00 PM	715	708
May-20	1	5/23/20 12:15 PM	5/23/20 3:30 PM	3.25	689	689	700	N/A	N/A	N/A	N/A
Jun-20	1	6/3/20 7:00 AM	6/3/20 12:45 PM	5.75	242	289	700	6/3/2020 4:45 AM	6/3/2020 5:45 AM	731	531
	2	6/5/20 1:45 AM	6/5/20 2:30 AM	0.75	512	617	700	N/A	N/A	N/A	N/A
	3	6/28/20 9:00 PM	6/28/20 9:45 PM	0.75	616	616	700	6/28/2020 8:00 PM	6/28/2020 8:45 PM	732	646
	4a	6/29/20 7:15 PM	6/29/20 7:15 PM	0.00*	388	388	700	6/29/2020 7:30 PM	6/29/2020 7:30 PM	725	725
	4b	6/29/20 7:45 PM	6/29/20 10:00 PM	2.25	647	673	700				
	5	6/30/20 2:00 PM	6/30/20 3:00 PM	1.00	592	632	700	N/A	N/A	N/A	N/A
Jul-20	1	7/10/20 7:15 PM	7/10/20 7:30 PM	0.25	666	666	700	7/10/2020 1:45 PM	7/10/2020 7:00 PM	749	743
	2	7/24/20 11:30 AM	7/24/20 12:45 PM	1.25	682	682	700	N/A	N/A	N/A	N/A
Aug-20	1a	8/3/20 10:00 PM	8/3/20 10:00 PM	0.00*	542	542	700	8/3/20 10:15 PM	8/3/20 10:45 PM	812	772
	1b	8/3/20 11:00 PM	8/4/20 12:15 AM	1.25	654	654	700				
	2	8/4/20 2:30 PM	8/4/20 4:30 PM	2.00	688	688	700	8/4/20 12:15 PM	8/4/20 2:15 PM	820	776
	3	8/27/20 9:45 PM	8/27/20 10:15 PM	0.50	673	673	700	8/27/20 8:45 PM	8/27/20 9:30 PM	752	744
Sep-20	1a	9/10/20 6:00 AM	9/10/20 6:30 AM	0.50	551	688	700	9/10/20 9:15 AM	9/10/20 11:00 AM	763	741
	1b	9/10/20 8:45 AM	9/10/20 9:00 AM	0.25	590	614	700				
	2	9/30/20 2:15 AM	9/30/20 2:15 AM	0.00*	505	505	700	9/30/20 2:30 AM	9/30/20 5:15 AM	787	768
Oct-20	1a	10/29/20 11:15 AM	10/29/20 11:15 AM	0.00*	665	665	700	10/29/20 11:30 AM	10/29/20 4:15 PM	778	740
	1b	10/29/20 6:30 PM	10/29/20 7:00 PM	0.50	692	692	700	10/29/20 5:30 PM	10/29/20 6:15 PM	764	752
	2	10/30/20 10:15 AM	10/30/20 2:00 PM	3.75	687	687	700	10/30/20 8:00 AM	10/30/20 10:00 AM	766	736
Nov-20	1	11/23/20 7:00 AM	11/23/20 7:30 AM	0.50	430	625	700	N/A	N/A	N/A	N/A
	2	11/30/20 3:30 PM	11/30/20 3:45 PM	0.25	659	659	700	11/30/20 11:15 AM	11/30/20 3:15 PM	828	748
Dec-20	1	12/5/20 5:30 AM	12/5/20 5:30 AM	0.00*	670	670	700	12/5/20 5:45 AM	12/5/20 8:45 AM	797	767

CY2020 Key Regulator Monitoring Report

Regulator NCM-47	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
May-20	1	5/23/20 11:45 AM	5/23/20 2:45 PM	3.00	367	689	700	N/A	N/A	N/A	N/A
Jun-20	1	6/5/20 1:00 AM	6/5/20 5:30 AM	4.50	195	617	700	N/A	N/A	N/A	N/A
Jul-20	1	7/6/20 4:45 PM	7/6/20 5:15 PM	0.50	237	496	700	N/A	N/A	N/A	N/A
Aug-20	1	8/7/20 6:15 AM	8/7/20 6:45 AM	0.50	251	282	700	N/A	N/A	N/A	N/A
	2	8/7/20 7:30 AM	8/7/20 8:30 AM	1.00	454	474	700	N/A	N/A	N/A	N/A
	3	8/12/20 4:45 PM	8/12/20 5:15 PM	0.50	247	454	700	N/A	N/A	N/A	N/A
	4	8/13/20 10:30 AM	8/13/20 12:00 PM	1.50	234	581	700	N/A	N/A	N/A	N/A
	5	8/18/20 4:30 AM	8/18/20 5:15 AM	0.75	476	641	700	N/A	N/A	N/A	N/A
Sep-20	1a	9/10/20 5:45 AM	9/10/20 7:00 AM	1.25	302	688	700	9/10/20 9:15 AM	9/10/20 11:00 AM	763	741
	1b	9/10/20 8:15 AM	9/10/20 9:00 AM	0.75	502	614					
	1c	9/10/20 8:30 PM	9/10/20 9:15 PM	0.75	410	630		9/10/20 9:30 PM	9/10/20 11:00 PM	753	724
	2	9/24/20 8:15 PM	9/24/20 10:30 PM	2.25	193	194	700	N/A	N/A	N/A	N/A
	3	9/25/20 12:15 PM	9/25/20 1:00 PM	0.75	197	202	700	N/A	N/A	N/A	N/A
	4a	9/26/20 1:00 PM	9/26/20 2:00 PM	1.00	213	213	700	N/A	N/A	N/A	N/A
	4b	9/26/20 7:45 PM	9/27/20 3:45 AM	8.00	189	193					
	5a	9/27/20 7:45 AM	9/27/20 3:00 PM	7.25	138	214	700	N/A	N/A	N/A	N/A
	5b	9/27/20 9:00 PM	9/28/20 4:15 AM	7.25	218	218					
	6a	9/28/20 7:45 AM	9/28/20 4:45 PM	9.00	145	221	700	N/A	N/A	N/A	N/A
	6b	9/28/20 9:00 PM	9/29/20 6:15 AM	9.25	187	198					
	7a	9/30/20 12:00 AM	9/30/20 2:15 AM	2.25	564	565	700	9/30/20 2:30 AM	9/30/20 5:15 AM	787	768
	7b	9/30/20 5:30 AM	9/30/20 6:00 AM	0.50	696	696					
	7c	9/30/20 12:00 PM	9/30/20 6:15 PM	6.25	220	221					
	7d	9/30/20 10:30 PM	9/30/20 11:00 PM	0.50	205	205					
Oct-20	1a	10/16/20 11:30 AM	10/16/20 11:30 AM	0.00*	422	422	700	10/16/20 11:45 AM	10/16/20 4:00 PM	774	740
	1b	10/16/20 4:15 PM	10/16/20 6:00 PM	1.75	696	696					
	2	10/29/20 10:30 AM	10/29/20 11:15 AM	0.75	384	665	700	10/29/20 11:30 AM	10/29/20 4:15 PM	778	740
Nov-20	1a	11/1/20 12:15 PM	11/1/20 4:30 PM	4.25	205	564	700	11/1/20 4:45 PM	11/1/20 5:00 PM	723	713
	1b	11/1/20 5:15 PM	11/1/20 7:45 PM	2.50	697	697					
	2a	11/11/20 8:30 PM	11/11/20 9:15 PM	0.75	431	614	700	11/11/20 9:30 PM	11/11/20 10:45 PM	789	771
	2b	11/11/20 11:00 PM	11/12/20 4:00 AM	5.00	697	697					
	3	11/26/20 9:45 AM	11/26/20 11:00 AM	1.25	582	582	700	11/26/20 6:15 AM	11/26/20 9:30 AM	825	763
	4	11/30/20 6:30 PM	11/30/20 7:45 PM	1.25	274	364	700	11/30/20 11:15 AM	11/30/20 3:15 PM	828	748
Dec-20	1	12/5/20 3:00 AM	12/5/20 5:30 AM	2.50	257	670	700	12/5/20 5:45 AM	12/5/20 8:45 AM	797	767

CY2020 Key Regulator Monitoring Report

Regulator NR-16	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Apr-20	1	4/13/20 4:00 PM	4/13/20 4:45 PM	0.75	250	251	340	4/13/20 8:00 AM	4/13/20 12:45 PM	351	311
Jun-20	1	6/6/20 3:00 PM	6/6/20 3:30 PM	0.50	140	140	255	N/A	N/A	N/A	N/A
	2	6/30/20 12:30 PM	6/30/20 1:00 PM	0.50	110	160	255	N/A	N/A	N/A	N/A
Jul-20	1	7/6/20 5:00 PM	7/6/20 5:30 PM	0.50	175	250	340	7/6/2020 5:45 PM	7/6/2020 8:45 PM	363	288
	2	7/31/20 2:15 AM	7/31/20 2:30 AM	0.50	179	190	255	7/31/2020 2:45 AM	7/31/2020 6:15 AM	283	272
Aug-20	1	8/4/20 12:00 PM	8/4/20 12:00 PM	0.00*	250	250	255	8/4/20 12:15 PM	8/4/20 6:30 PM	281	258
	2	8/17/20 9:15 PM	8/17/20 9:45 PM	0.50	243	258	340	N/A	N/A	N/A	N/A
	3	8/25/20 6:30 PM	8/25/20 7:00 PM	0.50	193	223	340	N/A	N/A	N/A	N/A
	4	8/27/20 8:15 PM	8/27/20 8:45 PM	0.50	188	225	340	N/A	N/A	N/A	N/A
Sep-20	1	9/10/20 8:30 PM	9/10/20 9:00 PM	0.50	174	264	340	9/10/20 9:30 PM	9/10/20 11:15 PM	374	352
	2	9/30/20 2:15 AM	9/30/20 2:15 AM	0.00*	281	281	340	9/30/20 2:30 AM	9/30/20 7:30 AM	373	355
Oct-20	1	10/29/20 12:45 PM	10/29/20 1:00 PM	0.25	317	317	340	10/29/20 1:15 PM	10/29/20 9:30 PM	329	308
Nov-20	1	11/30/20 11:00 AM	11/30/20 11:00 AM	0.00*	328	328	340	11/30/20 11:15 AM	11/30/20 5:30 PM	348	315
Dec-20	1a	12/5/20 5:15 AM	12/5/20 5:45 AM	0.50	190	284	340	N/A	N/A	N/A	N/A
	1b	12/5/20 6:30 AM	12/5/20 7:30 AM	1.00	286	287					
	2	12/24/20 11:30 PM	12/25/20 12:00 AM	0.50	109	161	340	12/25/20 3:15 AM	12/25/20 8:45 AM	353	311

CY2020 Key Regulator Monitoring Report

Regulator NR-23	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Apr-20	1	4/13/20 4:15 PM	4/13/20 5:00 PM	0.75	251	251	340	4/13/20 8:00 AM	4/13/20 12:45 PM	351	311
Jun-20	1	6/29/20 6:45 PM	6/29/20 7:15 PM	0.50	201	201	255	N/A	N/A	N/A	N/A
Jul-20	1	7/6/20 5:00 PM	7/6/20 5:30 PM	0.50	175	364	340	7/6/2020 3:45 PM	7/6/2020 8:45 PM	363	288
	2	7/8/20 5:00 PM	7/8/20 5:30 PM	0.50	118	187	340	N/A	N/A	N/A	N/A
	3	7/10/20 2:15 PM	7/10/20 2:45 PM	0.50	294	303	340	7/10/2020 3:00 PM	7/10/2020 8:45 PM	353	316
	4	7/31/20 2:15 AM	7/31/20 2:30 AM	0.50	179	190	255	7/31/2020 2:45 AM	7/31/2020 6:15 AM	283	272
Aug-20	1	8/3/20 9:45 PM	8/3/20 9:45 PM	0.00[a]	243	243	255	N/A	N/A	N/A	N/A
	2	8/17/20 9:15 PM	8/17/20 9:45 PM	0.50	243	258	340	N/A	N/A	N/A	N/A
	3	8/25/20 6:45 PM	8/25/20 7:15 PM	0.50	208	222	340	N/A	N/A	N/A	N/A
	4	8/27/20 8:30 PM	8/27/20 9:00 PM	0.50	206	243	340	N/A	N/A	N/A	N/A
Sep-20	1	9/10/20 8:30 PM	9/10/20 9:00 PM	0.50	174	264	340	9/10/20 9:30 PM	9/10/20 11:15 PM	374	352

CY2020 Key Regulator Monitoring Report

Regulator NR-33	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)

Regulator NR-33 has had no potential discharges outside the period of a critical wet weather event.

CY2020 Key Regulator Monitoring Report

Regulator OH-01	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-20	1a	1/25/20 1:30 PM	1/25/20 2:30 PM	1.00	232	233	240	1/25/20 2:45 PM	1/25/20 3:45 PM	246	236
	1b	1/25/20 4:15 PM	1/25/20 5:00 PM	0.75	224	224	240				
Feb-20	1	2/27/20 2:15 AM	2/27/20 3:45 AM	1.50	192	192	240	N/A	N/A	N/A	N/A
Mar-20	1	3/3/20 5:00 PM	3/3/20 6:00 PM	1.00	188	188	240	N/A	N/A	N/A	N/A
Sep-20	1	9/10/20 8:15 AM	9/10/20 9:15 AM	1.00	154	155	180	9/10/20 8:45 PM	9/11/20 1:45 AM	184	182
	2	9/30/20 2:15 AM	9/30/20 3:15 AM	1.00	154	154	180	9/29/20 11:00 PM	9/30/20 8:45 AM	185	181

CY2020 Key Regulator Monitoring Report

Regulator OH-06	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
May-20	1	5/8/20 10:45 PM	5/9/20 12:45 AM	2.00	186	189	240	5/23/20 12:00 PM	5/23/20 1:45 PM	243	241
Jul-20	1	7/1/20 1:15 PM	7/1/20 2:30 PM	1.25	145	189	240	N/A	N/A	N/A	N/A
Sep-20	1	9/10/20 8:45 AM	9/10/20 9:30 AM	0.75	152	152	180	9/10/20 8:45 PM	9/11/20 1:45 AM	184	182

CY2020 Key Regulator Monitoring Report

Regulator PR-06W	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-20	1a	1/25/20 1:30 PM	1/25/20 2:45 PM	1.25	63	103	120	1/25/20 3:00 PM	1/25/20 3:30 PM	121	120
	1b	1/25/20 3:45 PM	1/25/20 4:30 PM	0.75	99	99	120				
Mar-20	1	3/19/20 6:15 AM	3/19/20 10:00 AM	3.75	111	111	120	N/A	N/A	N/A	N/A
	2	3/23/20 1:15 PM	3/23/20 3:00 PM	1.75	80	84	120	N/A	N/A	N/A	N/A
Apr-20	1	4/9/20 2:45 PM	4/9/20 3:15 PM	0.50	50	50	120	N/A	N/A	N/A	N/A
	2a	4/13/20 5:45 AM	4/13/20 6:30 AM	0.75	60	88	120	N/A	N/A	N/A	N/A
	2b	4/13/20 3:00 PM	4/13/20 5:30 PM	2.50	76	87	120	N/A	N/A	N/A	N/A
	3	4/24/20 2:15 AM	4/24/20 4:00 AM	1.75	62	95	120	N/A	N/A	N/A	N/A
	4	4/30/20 10:00 PM	4/30/20 11:00 PM	1.00	44	82	120	N/A	N/A	N/A	N/A
May-20	1	5/8/20 11:45 PM	5/9/20 1:45 AM	2.00	81	81	120	N/A	N/A	N/A	N/A
	2	5/23/20 12:15 PM	5/23/20 2:15 PM	2.00	78	121	120	N/A	N/A	N/A	N/A
Jun-20	1	6/5/20 1:30 AM	6/5/20 2:15 AM	0.75	51	58	120	N/A	N/A	N/A	N/A
Jul-20	1	7/1/20 12:15 PM	7/1/20 12:45 PM	0.50	40	71	120	N/A	N/A	N/A	N/A
	2	7/3/20 10:15 PM	7/3/20 11:00 PM	0.75	86	86	120	N/A	N/A	N/A	N/A
	3	7/6/20 4:30 PM	7/6/20 5:30 PM	1.00	65	93	120	N/A	N/A	N/A	N/A
	4	7/11/20 7:30 PM	7/11/20 8:15 PM	0.75	58	71	120	7/10/2020 1:45 PM	7/10/2020 7:15 PM	133	129
	5	7/22/20 7:45 PM	7/22/20 8:15 PM	0.50	77	82	120	N/A	N/A	N/A	N/A
	6	7/24/20 1:00 PM	7/24/20 1:30 PM	0.50	111	111	120	N/A	N/A	N/A	N/A
	7	7/31/20 1:45 AM	7/31/20 2:45 AM	1.00	95	118	120	N/A	N/A	N/A	N/A
Aug-20	1	8/4/20 12:15 PM	8/4/20 3:45 PM	3.50	58	91	120	N/A	N/A	N/A	N/A
	2	8/19/20 11:00 AM	8/19/20 12:15 PM	1.25	90	90	120	N/A	N/A	N/A	N/A
Sep-20	1	9/10/20 8:30 PM	9/10/20 10:15 PM	1.75	29	32	120	9/10/20 9:30 PM	9/10/20 10:45 PM	133	131
	2	9/30/20 2:15 AM	9/30/20 4:45 AM	2.50	26	45	120	N/A	N/A	N/A	N/A
Oct-20	1a	10/16/20 11:30 AM	10/16/20 12:45 PM	1.25	62	113	120	10/16/20 1:00 PM	10/16/20 1:45 PM	121	121
	1b	10/16/20 2:00 PM	10/16/20 3:45 PM	1.75	119	119					
	2a	10/29/20 11:00 AM	10/29/20 11:45 AM	0.75	29	97	120	10/29/20 12:00 PM	10/29/20 12:00 PM	120	120
	2b	10/29/20 12:15 PM	10/29/20 3:15 PM	3.00	119	119					
	2c	10/29/20 5:15 PM	10/29/20 6:00 PM	0.75	107	107					
	3b	10/30/20 11:00 AM	10/30/20 1:15 PM	2.25	106	106	120	10/30/20 9:00 AM	10/30/20 10:00 AM	121	120
Nov-20	1	11/1/20 3:15 PM	11/1/20 4:15 PM	1.00	68	93	120	N/A	N/A		
	2a	11/30/20 11:00 AM	11/30/20 12:00 PM	1.00	86	119	120	11/30/20 12:15 PM	11/30/20 1:00 PM	122	121
	2b	11/30/20 1:15 PM	11/30/20 2:45 PM	1.50	115	115					
Dec-20	1	12/5/20 4:45 AM	12/5/20 9:00 AM	4.25	69	112	120	N/A	N/A	N/A	N/A
	2	12/25/20 1:00 AM	12/25/20 1:30 AM	0.50	93	94	120	N/A	N/A	N/A	N/A

CY2020 Key Regulator Monitoring Report

Regulator PR-13E	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-20	1a	1/25/20 12:45 PM	1/25/20 2:45 PM	2.00	31	103	120	1/25/20 3:00 PM	1/25/20 3:30 PM	121	120
	1b	1/25/20 3:45 PM	1/25/20 5:00 PM	1.25	99	99	120				
Feb-20	1	2/6/20 1:45 AM	2/6/20 2:45 AM	1.00	28	81	90	2/6/20 3:00 AM	2/6/20 3:30 AM	98	94
	2	2/11/20 5:30 AM	2/11/20 6:45 AM	1.25	34	61	90	2/11/20 8:00 AM	2/11/20 8:15 AM	91	91
	3	2/27/20 1:45 AM	2/27/20 2:45 AM	1.00	35	56	120	N/A	N/A	N/A	N/A
Mar-20	1	3/3/20 10:45 PM	3/3/20 11:30 PM	0.75	37	45	120	N/A	N/A	N/A	N/A
	2	3/19/20 6:30 AM	3/19/20 7:15 AM	0.75	110	110	120	N/A	N/A	N/A	N/A
	3	3/23/20 2:00 PM	3/23/20 5:45 PM	3.75	79	113	120	3/23/20 6:00 PM	3/23/20 6:00 PM	120	120
Apr-20	1	4/9/20 2:30 PM	4/9/20 3:15 PM	0.75	55	55	120	N/A	N/A	N/A	N/A
	2a	4/13/20 5:00 AM	4/13/20 6:30 AM	1.50	50	88	120	N/A	N/A	N/A	N/A
	2b	4/13/20 7:30 AM	4/13/20 10:45 AM	3.25	67	95					
	2c	4/13/20 11:00 AM	4/13/20 11:30 AM	0.50	80	86					
	2d	4/13/20 1:45 PM	4/13/20 5:00 PM	3.25	88	93					
	2e	4/13/20 5:45 PM	4/13/20 7:15 PM	1.50	86	86					
	3	4/21/20 3:15 PM	4/21/20 4:15 PM	1.00	80	80	120	N/A	N/A	N/A	N/A
	4a	4/24/20 1:30 AM	4/24/20 5:30 AM	4.00	39	95	120	N/A	N/A	N/A	N/A
	4b	4/24/20 11:00 AM	4/24/20 11:45 AM	0.75	81	92					
	5	4/26/20 5:30 PM	4/26/20 6:30 PM	1.00	65	66	120	N/A	N/A	N/A	N/A
	6a	4/30/20 8:30 AM	4/30/20 9:00 AM	0.50	31	31	120	N/A	N/A	N/A	N/A
	6b	4/30/20 9:45 PM	4/30/20 11:00 PM	1.25	37	82					
May-20	1	5/8/20 11:15 PM	5/9/20 1:00 AM	1.75	83	83	120	N/A	N/A	N/A	N/A
	2	5/23/20 11:45 AM	5/23/20 2:00 PM	2.25	54	121	120	N/A	N/A	N/A	N/A
Jun-20	1a	6/3/20 3:30 AM	6/3/20 4:15 AM	0.75	65	103	120	N/A	N/A	N/A	N/A
	1b	6/3/20 9:45 PM	6/3/20 10:30 PM	0.75	49	65	120				
	2a	6/5/20 1:15 AM	6/5/20 2:30 AM	1.25	47	59	120	N/A	N/A	N/A	N/A
	2b	6/6/20 12:45 AM	6/6/20 1:15 AM	0.50	25	32	120				
	3	6/20/20 1:00 AM	6/20/20 5:30 AM	4.50	20	20	120	N/A	N/A	N/A	N/A
Jul-20	1	7/1/20 1:15 PM	7/1/20 2:00 PM	0.75	88	89	120	N/A	N/A	N/A	N/A
	2	7/3/20 9:30 PM	7/3/20 10:00 PM	0.50	85	87	120	N/A	N/A	N/A	N/A
	3	7/5/20 3:45 AM	7/5/20 4:30 AM	0.75	23	27	120	N/A	N/A	N/A	N/A
	4	7/6/20 4:30 PM	7/6/20 5:45 PM	1.25	65	93	120	N/A	N/A	N/A	N/A
	5	7/11/20 7:30 PM	7/11/20 8:30 PM	1.00	58	77	120	7/10/2020 1:45 PM	7/10/2020 7:15 PM	133	129
	6	7/31/20 2:00 AM	7/31/20 3:00 AM	1.00	118	118	120	N/A	N/A	N/A	N/A
Aug-20	1	8/4/20 12:00 PM	8/4/20 2:45 PM	2.75	48	91	120	N/A	N/A	N/A	N/A
	2a	8/7/20 5:15 AM	8/7/20 5:45 AM	0.50	26	27	120	N/A	N/A	N/A	N/A
	2b	8/7/20 6:15 AM	8/7/20 7:15 AM	1.00	29	41	120	N/A	N/A	N/A	N/A
	3	8/13/20 10:45 AM	8/13/20 11:45 AM	1.00	54	84	120	N/A	N/A	N/A	N/A
	4	8/19/20 10:30 AM	8/19/20 11:15 AM	0.75	65	90	120	N/A	N/A	N/A	N/A
	5	8/27/20 9:00 PM	8/27/20 9:30 PM	0.50	40	48	120	N/A	N/A	N/A	N/A
Sep-20	1a	9/3/20 11:00 PM	9/3/20 11:15 PM	0.25	67	62	120	9/3/20 9:30 PM	9/3/20 10:45 PM	133	131
	2a	9/10/20 3:45 AM	9/10/20 4:45 AM	1.00	21	21	120	9/10/20 9:30 PM	9/10/20 10:45 PM	135	133
	2b	9/10/20 5:15 AM	9/10/20 5:45 AM	0.50	22	24					
	2c	9/10/20 6:45 AM	9/10/20 7:15 AM	0.50	25	25					
	2d	9/10/20 8:15 AM	9/10/20 9:30 AM	1.25	28	41					
	2e	9/10/20 8:30 PM	9/10/20 9:15 PM	0.75	29	31					
	3a	9/29/20 7:45 PM	9/29/20 10:30 PM	2.75	29	32	120	N/A	N/A	N/A	N/A
	3b	9/29/20 11:00 PM	9/30/20 1:00 AM	2.00	28	28					
	4	9/30/20 2:00 AM	9/30/20 6:00 AM	4.00	25	49	120	N/A	N/A	N/A	N/A

CY2020 Key Regulator Monitoring Report

Regulator PR-13E	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Oct-20	1a	10/12/20 7:45 AM	10/12/20 8:15 AM	0.50	46	55	120	N/A	N/A	N/A	N/A
	1b	10/12/20 10:00 AM	10/12/20 12:45 PM	2.75	68	91					
	2a	10/16/20 11:00 AM	10/16/20 12:45 PM	1.75	33	113	120	10/16/20 1:00 PM	10/16/20 1:45 PM	121	121
	2b	10/16/20 2:00 PM	10/16/20 4:15 PM	2.25	119	119					
	3a	10/29/20 10:30 AM	10/29/20 11:45 AM	1.25	29	97	120	10/29/20 12:00 PM	10/29/20 12:00 PM	120	120
	3b	10/29/20 12:15 PM	10/29/20 7:00 PM	6.75	119	119					
	3c	10/29/20 9:45 PM	10/29/20 10:30 PM	0.75	89	89					
	4a	10/30/20 6:15 AM	10/30/20 8:00 AM	1.75	61	110	120	10/30/20 9:00 AM	10/30/20 10:00 AM	121	120
	4b	10/30/20 10:15 AM	10/30/20 12:00 PM	1.75	117	117					
Nov-20	1	11/1/20 2:45 PM	11/1/20 4:45 PM	2.00	54	93	120	N/A	N/A	N/A	N/A
	2	11/11/20 7:45 PM	11/11/20 9:45 PM	2.00	66	98	120	N/A	N/A	N/A	N/A
	3a	11/23/20 6:00 AM	11/23/20 6:45 AM	0.75	24	46	120	N/A	N/A	N/A	N/A
	3b	11/23/20 8:00 AM	11/23/20 9:00 AM	1.00	74	74					
	4	11/26/20 5:45 AM	11/26/20 7:15 AM	1.50	81	103	120	N/A	N/A	N/A	N/A
	5a	11/30/20 10:15 AM	11/30/20 12:00 PM	1.75	60	119	120	11/30/20 12:15 PM	11/30/20 1:00 PM	122	121
	5b	11/30/20 1:15 PM	11/30/20 2:15 PM	1.00	115	115					
Dec-20	1	12/5/20 4:15 AM	12/5/20 9:15 AM	5.00	56	112	120	N/A	N/A	N/A	N/A
	2	12/24/20 11:15 PM	12/25/20 1:45 AM	2.50	49	94	120	N/A	N/A	N/A	N/A

CY2020 Key Regulator Monitoring Report

Regulator RH-02	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)

Regulator RH-02 has had no potential discharges outside the period of a critical wet weather event.

CY2020 Key Regulator Monitoring Report

Regulator RH-20	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)

Regulator RH-20 has had no potential discharges outside the period of a critical wet weather event.

CY2020 Key Regulator Monitoring Report

Regulator TI-09	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-20	1	1/25/20 5:45 PM	1/25/20 6:15 PM	0.50	146	146	160	1/25/20 3:30 PM	1/25/20 5:15 PM	164	162
Feb-20	1	2/6/20 3:30 AM	2/6/20 5:15 AM	1.75	146	146	160	N/A	N/A	N/A	N/A
	2	2/27/20 2:45 AM	2/27/20 3:45 AM	1.00	151	151	160	N/A	N/A	N/A	N/A
	3	2/27/20 4:15 AM	2/27/20 5:00 AM	0.75	133	133	160	N/A	N/A	N/A	N/A
Mar-20	1	3/13/20 10:00 AM	3/13/20 11:00 AM	1.00	132	133	160	N/A	N/A	N/A	N/A
	2	3/19/20 8:15 AM	3/19/20 9:00 AM	0.75	158	158	160	3/19/20 6:15 AM	3/19/20 8:00 AM	160	157
	3a	3/23/20 4:15 PM	3/23/20 4:15 PM	0.00*	159	159	160	N/A	N/A	N/A	N/A
	3b	3/23/20 9:30 PM	3/23/20 11:00 PM	1.50	147	147	160	3/23/20 4:45 PM	3/23/20 9:00 PM	164	162
Apr-20	1a	4/13/20 6:30 AM	4/13/20 9:30 AM	3.00	138	156	160	4/13/20 9:45 AM	4/13/20 1:30 PM	164	161
	1b	4/13/20 1:45 PM	4/13/20 2:30 PM	0.75	143	153	160				
	1c	4/13/20 5:00 PM	4/13/20 5:15 PM	0.25	153	153	160	4/13/20 2:45 PM	4/13/20 4:45 PM	164	160
	2	4/21/20 3:30 PM	4/21/20 5:30 PM	0.75	115	139	160	N/A	N/A	N/A	N/A
	3	4/24/20 4:15 AM	4/24/20 5:45 AM	0.50	137	139	160	N/A	N/A	N/A	N/A
May-20	1	5/23/20 11:45 AM	5/23/20 1:45 PM	2.00	53	53	160	N/A	N/A	N/A	N/A
Jul-20	1a	7/10/20 2:15 PM	7/10/20 3:15 PM	1.00	131	159	160	7/10/2020 3:15 PM	7/10/2020 6:45 PM	170	164
	1b	7/10/20 7:00 PM	7/10/20 7:30 PM	0.50	158	158	160				
	2	7/22/20 8:30 PM	7/22/20 10:30 PM	2.00	154	146	160	N/A	N/A	N/A	N/A
Aug-20	1	8/4/20 5:15 AM	8/4/20 6:30 AM	1.25	52	154	160	N/A	N/A	N/A	N/A
	2	8/17/20 9:30 PM	8/17/20 9:45 PM	0.25	99	137	160	8/17/20 10:00 PM	8/17/20 11:00 PM	166	163
	3	8/17/20 11:15 PM	8/17/20 11:45 PM	0.50	159	159	160	N/A	N/A	N/A	N/A
	4	8/27/20 8:45 PM	8/27/20 10:15 PM	1.50	90	156	160	N/A	N/A	N/A	N/A
Sep-20	1a	9/10/20 7:15 AM	9/10/20 9:15 AM	2.00	136	157	160	9/10/20 9:30 AM	9/10/20 10:45 AM	169	165
	1b	9/10/20 11:00 AM	9/10/20 11:45 AM	0.75	159	159					
	1c	9/10/20 10:00 PM	9/11/20 12:00 AM	2.00	115	151					
	2	9/30/20 4:15 AM	9/30/20 6:30 AM	2.25	150	157	160	N/A	N/A	N/A	N/A
Oct-20	1	10/16/20 6:00 PM	10/16/20 7:00 PM	1.00	143	143	160	10/16/20 12:30 PM	10/16/20 5:45 PM	166	160
	2	10/29/20 11:30 AM	10/29/20 12:00 PM	0.50	137	153	160	10/29/20 12:15 PM	10/29/20 4:00 PM	167	163
Nov-20	1a	11/1/20 4:15 PM	11/1/20 5:15 PM	1.00	95	150	160	N/A	N/A	N/A	N/A
	1b	11/1/20 5:30 PM	11/1/20 6:15 PM	0.75	151	153					
	2a	11/11/20 8:15 PM	11/11/20 9:15 PM	1.00	121	138	160	N/A	N/A	N/A	N/A
	2b	11/11/20 9:30 PM	11/11/20 10:30 PM	1.00	146	156					
	3a	11/15/20 9:15 PM	11/15/20 9:45 PM	0.50	56	57	160	N/A	N/A	N/A	N/A
	3b	11/15/20 10:00 PM	11/15/20 10:30 PM	0.50	60	95					
	4a	11/23/20 8:15 AM	11/23/20 9:00 AM	0.75	128	136	160	N/A	N/A	N/A	N/A
	4b	11/23/20 9:15 AM	11/23/20 10:00 AM	0.75	138	148					
	5	11/26/20 6:30 AM	11/26/20 8:00 AM	1.50	69	157	160	11/26/20 8:15 AM	11/26/20 9:00 AM	165	163
	6	11/30/20 11:15 AM	11/30/20 12:00 PM	1.75	58	86	160	11/30/20 12:15 PM	11/30/20 4:00 PM	173	168
Dec-20	1a	12/5/20 5:30 AM	12/5/20 6:30 AM	1.00	138	157	160	12/5/20 6:45 AM	12/5/20 8:30 AM	163	161
	1b	12/5/20 8:45 AM	12/5/20 11:30 AM	2.75	158	158					
	2a	12/25/20 3:15 AM	12/25/20 4:15 AM	1.00	141	148	160	N/A	N/A	N/A	N/A
	2b	12/25/20 8:30 AM	12/25/20 9:45 AM	1.25	137	149					
	2c	12/25/20 10:00 AM	12/25/20 10:45 AM	0.75	148	148					
	3	12/31/20 9:15 AM	12/31/20 11:30 AM	2.25	150	152	160	N/A	N/A	N/A	N/A

CY2020 Key Regulator Monitoring Report

Regulator TI-10A	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)

Regulator TI-10A has had no potential discharges outside the period of a critical wet weather event.

CY2020 Key Regulator Monitoring Report

Regulator WIB-53	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)

Regulator WIB-53 has had no potential discharges outside the period of a critical wet weather event.

CY2020 Key Regulator Monitoring Report

Regulator WB-67	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Apr-20	1a	4/13/20 8:00 AM	4/13/20 8:45 AM	0.75	516	542	550	4/13/20 9:00 AM	4/13/20 10:45 AM	562	542
	1b	4/13/20 11:00 AM	4/13/20 7:30 PM	8.5	547	547					
	2a	4/30/20 9:30 AM	4/30/20 10:45 AM	1.25	529	529	550	4/30/20 9:00 AM	4/30/20 9:15 AM	600	583
	2b	4/30/20 10:00 PM	4/30/20 11:15 PM	1.25	437	493					
May-20	1	5/9/20 2:15 AM	5/9/20 3:00 AM	0.75	230	259	480	N/A	N/A	N/A	N/A
	2a	5/23/20 12:15 PM	5/23/20 1:30 PM	1.25	107	124	480	N/A	N/A	N/A	N/A
	2b	5/23/20 1:45 PM	5/23/20 2:15 PM	0.50	132	132	480	N/A	N/A	N/A	N/A
Jul-20	1	7/6/20 5:00 PM	7/6/20 6:45 PM	1.75	246	404	550	N/A	N/A	N/A	N/A
	2	7/8/20 3:15 PM	7/8/20 6:00 PM	2.75	228	468	550	N/A	N/A	N/A	N/A
	3	7/10/20 8:15 PM	7/11/20 1:00 AM	4.75	416	441	550	N/A	N/A	N/A	N/A
Aug-20	1	8/4/20 1:30 PM	8/4/20 3:45 PM	2.25	417	437	550	N/A	N/A	N/A	N/A
Sep-20	1	9/29/20 10:45 PM	9/29/20 10:45 PM	0.00*	462	462	550	N/A	N/A	N/A	N/A
Oct-20	1	10/30/20 11:00 AM	10/30/20 2:00 PM	3.00	408	408	550	N/A	N/A	N/A	N/A
Nov-20	1a	11/1/20 1:00 PM	11/1/20 2:15 PM	1.25	220	271	550	N/A	N/A	N/A	N/A
	1b	11/1/20 6:45 PM	11/1/20 9:15 PM	2.50	327	327					

CY2020 Key Regulator Monitoring Report

Regulator WIM-23	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jun-20	1	6/29/20 9:00 PM	6/29/20 11:00 PM	2.00	339	339	550	N/A	N/A	N/A	N/A
Jul-20	1	7/10/20 8:15 PM	7/10/20 8:15 PM	0.00*	416	416	550	7/10/2020 2:15 PM	7/10/2020 8:00 PM	562	516
	2	7/22/20 7:30 PM	7/22/20 7:30 PM	0.00*	425	425	550	7/22/2020 7:45 PM	7/22/2020 8:00 PM	502	495
Dec-20	1	12/5/20 8:00 AM	12/5/20 8:45 AM	0.75	542	542	550	12/5/20 6:45 AM	12/5/20 7:45 AM	671	566

Appendix 3.2: WET WEATHER THROTTLING SUMMARY – CY 2020

28TH WARD - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
1/25/2020	127.5 (Interim Limit)	YES	128	133	131	N/A	1/25/2020	2:15 PM	1/25/2020	5:30 PM	133	131
2/6/2020	127.5 (Interim Limit)	YES	127	133	128	N/A	2/6/2020	3:15 PM	2/6/2020	6:45 PM	133	128
2/27/2020	127.5 (Interim Limit)	YES	134	133	133	N/A	2/27/2020	1:45 AM	2/27/2020	3:45 AM	133	130
	127.5 (Interim Limit)	YES	135	131	130	N/A						
3/19/2020	127.5 (Interim Limit)	YES	135	138	132	N/A	3/19/2020	3:45 AM	3/19/2020	9:30 AM	138	132
3/23/2020	127.5 (Interim Limit)	YES	133	138	133	N/A	3/23/2020	1:30 PM	3/23/2020	10:45 PM	138	132
4/13/2020	127.5 (Interim Limit)	YES	134	142	132	N/A	4/13/2020	5:45 AM	4/13/2020	5:30 PM	142	132
	127.5 (Interim Limit)	NO	n/a	n/a	n/a	N/A	4/13/2020	6:30 PM	4/13/2020	7:30 PM	135	133
4/21/2020	127.5 (Interim Limit)	YES	138	140	137	N/A	4/21/2020	3:45 PM	4/21/2020	5:00 PM	140	134
4/24/2020	127.5 (Interim Limit)	YES	130	131	130	N/A	4/24/2020	3:30 AM	4/24/2020	6:00 AM	131	130
4/30/2020	127.5 (Interim Limit)	YES	130	135	128	N/A	4/30/2020	9:00 AM	4/30/2020	10:15 AM	131	130
5/8/2020	127.5 (Interim Limit)	NO	n/a	n/a	n/a	N/A	5/8/2020	11:00 PM	5/9/2020	12:00 AM	135	134
5/23/2020	127.5 (Interim Limit)	YES	135	135	130	N/A	5/23/2020	12:15 PM	5/23/2020	1:45 PM	135	130
6/3/2020	127.5 (Interim Limit)	YES	135	140	132	N/A	6/3/2020	4:45 AM	6/3/2020	6:30 AM	140	132
6/28/2020	127.5 (Interim Limit)	YES	134	135	132	N/A	6/28/2020	8:00 PM	6/28/2020	9:15 PM	139	133
6/29/2020	127.5 (Interim Limit)	YES	134	134	131	N/A	6/29/2020	7:30 PM	6/29/2020	8:45 PM	139	132
7/1/2020	127.5 (Interim Limit)	YES	133	134	130	N/A	7/1/2020	11:00 AM	7/1/2020	12:45 PM	138	131
7/10/2020	127.5 (Interim Limit)	YES	138	143	130	N/A	7/10/2020	1:30 PM	7/10/2020	7:15 PM	143	130
7/22/2020	127.5 (Interim Limit)	YES	135	141	132	N/A	7/22/2020	7:30 PM	7/22/2020	11:15 PM	141	132
7/24/2020	90 (3 PBTs o/s)	YES	88	92	89	N/A	7/24/2020	10:45 AM	7/24/2020	9:00 PM	100	89
7/31/2020	127.5 (Interim Limit)	YES	132	137	134	N/A	7/31/2020	2:00 AM	7/31/2020	6:00 AM	137	133
	127.5 (Interim Limit)	YES	134	141	136	N/A	7/31/2020	7:30 AM	7/31/2020	10:00 AM	141	136
8/4/2020	127.5 (Interim Limit)	YES	137	154	133	N/A	8/4/2020	5:00 AM	8/4/2020	9:30 AM	154	133
	127.5 (Interim Limit)	YES	137	145	136	N/A	8/4/2020	12:00 PM	8/4/2020	4:45 PM	145	133
8/7/2020	127.5 (Interim Limit)	NO	n/a	n/a	n/a	N/A	8/7/2020	10:00 PM	8/7/2020	10:00 PM	128	128
8/17/2020	127.5 (Interim Limit)	YES	134	134	134	N/A	8/17/2020	10:15 PM	8/17/2020	11:00 PM	134	132
8/19/2020	127.5 (Interim Limit)	YES	133	135	132	N/A	8/19/2020	10:45 AM	8/19/2020	1:00 PM	135	132
8/27/2020	127.5 (Interim Limit)	YES	132	137	130	N/A	8/27/2020	8:45 PM	8/27/2020	11:45 PM	137	130

26TH WARD - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
9/1/2020	127.5 (Interim Limit)	YES	135	141	132	N/A	9/1/2020	5:30 AM	9/1/2020	8:15 AM	147	133
9/3/2020	127.5 (Interim Limit)	YES	134	134	131	N/A	9/3/2020	9:30 PM	9/4/2020	12:00 AM	134	131
9/10/2020	127.5 (Interim Limit)	YES	132	152	132	N/A	9/10/2020	5:45 AM	9/10/2020	1:15 PM	152	132
	127.5 (Interim Limit)	YES	135	141	135	N/A	9/10/2020	9:45 PM	9/10/2020	12:15 AM	141	135
9/30/2020	127.5 (Interim Limit)	YES	136	140	134	N/A	9/30/2020	2:30 AM	9/30/2020	7:00 AM	141	134
10/12/2020	127.5 (Interim Limit)	YES	133	137	132	N/A	10/12/2020	10:00 AM	10/12/2020	8:00 PM	137	132
10/16/2020 - 10/17/2020	127.5 (Interim Limit)	YES	135	136	130	N/A	10/16/2020	11:45 AM	10/16/2020	7:30 PM	136	130
	127.5 (Interim Limit)	YES	132	133	130	N/A	10/17/2020	1:30 AM	10/17/2020	3:00 AM	133	130
10/29/2020 - 10/30/2020	127.5 (Interim Limit)	YES	140	139	134	N/A	10/29/2020	11:00 AM	10/29/2020	1:30 AM	139	131
	127.5 (Interim Limit)	YES	134	139	133	N/A	10/30/2020	7:15 AM	10/30/2020	2:30 PM	139	133
11/1/2020	127.5 (Interim Limit)	YES	134	135	131	N/A	11/1/2020	4:15 PM	11/1/2020	7:45 PM	135	131
11/11/2020	127.5 (Interim Limit)	YES	135	135	129	N/A	11/11/2020	9:15 PM	11/12/2020	12:00 AM	135	129
11/15/2020	127.5 (Interim Limit)	YES	135	140	132	N/A	11/15/2020	10:15 PM	11/15/2020	11:45 PM	140	131
11/23/2020	127.5 (Interim Limit)	YES	136	140	134	N/A	11/23/2020	8:30 AM	11/23/2020	10:15 AM	140	134
11/26/2020	127.5 (Interim Limit)	YES	139	139	132	N/A	11/26/2020	5:45 AM	11/26/2020	9:15 AM	139	132
11/30/2020	127.5 (Interim Limit)	YES	139	140	133	N/A	11/30/2020	11:00 AM	11/30/2020	4:30 PM	140	133
12/5/2020	127.5 (Interim Limit)	YES	135	136	132	N/A	12/5/2020	4:45 AM	12/5/2020	3:30 PM	137	132
12/25/2020	127.5 (Interim Limit)	YES	134	135	132	N/A	12/25/2020	12:15 AM	12/25/2020	1:15 PM	135	132
12/31/2020	127.5 (Interim Limit)	YES	134	136	131	N/A	12/31/2020	8:45 AM	12/31/2020	12:00 PM	136	131

BOWERY BAY - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
1/25/2020	300	NO	n/a	n/a	n/a	N/A	1/25/2020	2:00 PM	1/25/2020	6:15 PM	357	320
2/6/2020	300	NO	n/a	n/a	n/a	N/A	2/6/2020	2:30 AM	2/6/2020	5:45 AM	324	317
2/10/2020	300	NO	n/a	n/a	n/a	N/A	2/10/2020	4:00 PM	2/10/2020	5:30 PM	312	308
2/11/2020	300	NO	n/a	n/a	n/a	N/A	2/11/2020	8:00 AM	2/11/2020	9:00 AM	316	311
2/13/2020	300	NO	n/a	n/a	n/a	N/A	2/13/2020	1:00 AM	2/13/2020	2:45 AM	318	311
2/27/2020	300	NO	n/a	n/a	n/a	N/A	2/27/2020	2:00 AM	2/27/2020	6:00 AM	315	311
3/3/2020 - 3/4/2020	300	NO	n/a	n/a	n/a	N/A	3/3/2020	11:30 PM	3/4/2020	12:15 AM	315	309
3/13/2020	300	NO	n/a	n/a	n/a	N/A	3/13/2020	10:00 AM	3/13/2020	10:00 AM	300	300
3/19/2020	300	YES	310	328	309	N/A	3/19/2020	4:00 AM	3/19/2020	10:15 AM	328	308
3/23/2020	300	NO	n/a	n/a	n/a	N/A	3/23/2020	1:45 PM	3/23/2020	8:15 PM	338	319
3/28/2020	300	NO	n/a	n/a	n/a	N/A	3/28/2020	8:00 PM	3/28/2020	9:15 PM	314	308
4/9/2020	300	NO	n/a	n/a	n/a	N/A	4/9/2020	3:00 PM	4/9/2020	3:45 PM	317	310
4/13/2020	300	YES	316	333	325	N/A	4/13/2020	5:45 AM	4/13/2020	7:30 PM	333	319
4/21/2020	300	NO	n/a	n/a	n/a		4/21/2020	3:30 PM	4/21/2020	5:00 PM	328	318
4/24/2020	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	4/24/2020	2:30 AM	4/24/2020	6:30 AM	315	301
	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	4/24/2020	10:30 AM	4/24/2020	12:30 PM	311	301
4/30/2020 - 5/1/2020	284 (2 LL M8Ps o/s)	YES	302	308	303	N/A	4/30/2020	9:00 AM	4/30/2020	12:30 PM	308	298
	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	4/30/2020	10:15 PM	5/1/2020	12:45 AM	360	325
5/8/2020	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	5/8/2020	10:15 PM	5/9/2020	2:30 AM	352	305
5/23/2020	300	YES	306	324	307	N/A	5/23/2020	11:45 AM	5/23/2020	3:30 PM	324	307
6/29/2020	300	NO	n/a	n/a	n/a	N/A	6/29/2020	8:00 PM	6/29/2020	8:00 PM	310	310
7/10/2020	300	YES	320	338	320	N/A	7/10/2020	1:45 PM	7/10/2020	11:00 PM	338	318
7/22/2020	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	7/22/2020	7:45 PM	7/22/2020	11:30 PM	361	312
7/24/2020	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	7/24/2020	11:00 AM	7/24/2020	1:30 PM	325	314
7/31/2020	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	7/31/2020	3:00 AM	7/31/2020	4:45 AM	350	324
	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	7/31/2020	8:00 AM	7/31/2020	9:00 AM	311	298
8/3/2020 - 8/4/2020	284 (2 LL M8Ps o/s)	YES	318	325	308	N/A	8/3/2020	10:15 PM	8/4/2020	12:30 AM	325	303
	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	8/4/2020	7:00 AM	8/4/2020	7:30 AM	293	289

BOWERY BAY - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
	284 (2 LL M8Ps o/s)	YES	287	321	293	N/A	8/4/2020	12:15 PM	8/4/2020	5:00 PM	321	293
8/12/2020	284 (2 LL M8Ps o/s)	YES	317	335	318	N/A	8/12/2020	4:15 PM	8/12/2020	8:00 PM	335	309
8/13/2020	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	8/13/2020	11:15 AM	8/13/2020	11:45 AM	298	289
8/17/2020 - 8/18/2020	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	8/17/2020	9:45 PM	8/18/2020	12:45 AM	343	318
	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	8/18/2020	5:00 PM	8/18/2020	5:30 PM	310	295
8/19/2020	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	8/19/2020	12:15 PM	8/19/2020	12:30 PM	285	285
8/25/2020	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	8/25/2020	7:15 PM	8/25/2020	9:30 PM	323	312
8/27/2020	284 (2 LL M8Ps o/s)	YES	228	331	312	N/A	8/27/2020	8:45 PM	8/28/2020	12:00 AM	331	308
9/3/2020	300	YES	314	338	329	N/A	9/3/2020	9:45 PM	9/4/2020	12:45 AM	338	325
9/10/2020	300	YES	304	317	307	N/A	9/10/2020	6:30 AM	9/10/2020	11:30 AM	335	311
9/10/2020	300	YES	330	334	309	N/A	9/10/2020	9:30 PM	9/11/2020	12:45 AM	334	308
9/30/2020	300	YES	323	330	306	N/A	9/30/2020	2:15 AM	9/30/2020	7:30 AM	330	309
10/12/2020	300	YES	315	315	307	N/A	10/12/2020	11:15 AM	10/12/2020	5:45 PM	319	309
10/16/2020	300	YES	312	320	313	N/A	10/16/2020	12:00 PM	10/16/2020	6:30 PM	320	313
10/29/2020 - 10/30/2020	284 (2 LL M8Ps o/s)	YES	310	327	313	N/A	10/29/2020	11:00 AM	10/29/2020	11:00 PM	327	312
	284 (2 LL M8Ps o/s)	YES	326	324	318	N/A	10/30/2020	6:30 AM	10/30/2020	12:45 PM	324	314
11/1/2020	284 (2 LL M8Ps o/s)	YES	313	316	310	N/A	11/1/2020	3:15 PM	11/1/2020	8:15 PM	316	307
11/11/2020	284 (2 LL M8Ps o/s)	YES	301	324	311	N/A	11/11/2020	8:00 PM	11/2/2020	1:00 AM	324	307
11/15/2020	284 (2 LL M8Ps o/s)	NO	n/a	n/a	n/a	N/A	11/15/2020	10:45 PM	11/16/2020	1:00 AM	337	310
11/23/2020	300	YES	325	327	316	N/A	11/23/2020	6:45 AM	11/23/2020	10:45 AM	327	315
11/26/2020	300	YES	303	328	317	N/A	11/26/2020	5:45 AM	11/26/2020	9:30 AM	328	315
11/30/2020	300	YES	330	352	335	N/A	11/30/2020	11:30 AM	11/30/2020	5:30 PM	352	328
12/5/2020	300	YES	330	335	309	N/A	12/5/2020	5:30 AM	12/5/2020	1:30 PM	337	314
12/14/2020	300	YES	247	257	201	Cancelled Itme No. 5585	12/14/2020	3:45 PM	12/14/2020	4:45 PM	257	201
12/25/2020	300	YES	320	324	317	N/A	12/25/2020	12:30 AM	12/25/2020	11:30 AM	369	317
12/31/2020	300	YES	315	322	320	N/A	12/31/2020	8:30 AM	12/31/2020	11:30 AM	322	314

CONEY ISLAND - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
1/25/2020	198 (consent order)	YES	212	212	210	N/A	1/25/2020	3:30 PM	1/26/2020	12:45 AM	212	210
3/19/2020	198 (consent order)	YES	209	210	207	N/A	3/19/2020	6:00 AM	3/19/2020	3:00 PM	210	207
3/23/2020	198 (consent order)	YES	212	214	210	N/A	3/23/2020	5:15 PM	3/24/2020	3:45 AM	214	210
4/13/2020	198 (consent order)	YES	213	213	203	N/A	4/13/2020	9:45 AM	4/14/2020	1:30 AM	213	203
6/29/2020	198 (consent order)	YES	200	203	199	N/A	6/29/2020	8:00 PM	6/30/2020	4:30 AM	203	199
7/10/2020	198 (consent order)	YES	200	212	205	N/A	7/10/2020	1:30 PM	7/11/2020	2:30 AM	212	205
7/22/2020	198 (consent order)	YES	198	200	152	N/A	7/22/2020	1:30 PM	7/23/2020	6:10 AM	200	152
7/24/2020	198 (consent order)	YES	208	210	206	N/A	7/24/2020	11:45 AM	7/24/2020	9:00 PM	210	208
7/31/2020	198 (consent order)	YES	208	208	167	N/A	7/31/2020	2:15 AM	7/31/2020	8:45 PM	208	167
9/3/2020	198 (consent order)	YES	200	207	201	N/A	9/3/2020	10:15 PM	9/4/2020	2:15 AM	207	201
9/10/2020	198 (consent order)	YES	200	210	200	N/A	9/10/2020	6:30 AM	9/10/2020	5:30 PM	210	200
	198 (consent order)	YES	200	267	216	N/A	9/10/2020	11:00 PM	9/11/2020	2:15 AM	267	216
9/30/2020	198 (consent order)	YES	204	204	201	N/A	9/30/2020	4:45 AM	9/30/2020	10:00 AM	204	201
10/12/2020	198 (consent order)	YES	198	208	206	N/A	10/12/2020	12:30 PM	10/12/2020	9:45 PM	208	206
10/16/2020	198 (consent order)	YES	204	211	207	N/A	10/16/2020	12:30 PM	10/17/2020	4:15 AM	211	207
10/29/2020	198 (consent order)	YES	201	215	207	N/A	10/29/2020	12:00 PM	12/30/2020	7:00 PM	215	207
11/23/2020	198 (consent order)	YES	201	201	163	N/A	11/23/2020	8:30 AM	11/23/2020	12:30 PM	201	163
11/30/2020	198 (consent order)	YES	202	212	203	N/A	11/30/2020	12:00 PM	11/30/2020	11:00 PM	212	203
12/5/2020	198 (consent order)	YES	199	208	204	N/A	12/5/2020	7:45 AM	12/5/2020	6:00 PM	208	204
12/25/2020	198 (consent order)	YES	157	157	109	N/A	12/25/2020	3:15 AM	12/26/2020	2:30 AM	157	109
12/31/2020	198 (consent order)	YES	198	199	158	N/A	12/31/2020	9:45 AM	12/31/2020	12:45 PM	199	158

HUNTS POINT - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
3/19/2020	400	NO	n/a	n/a	n/a	N/A	3/19/2020	5:45 AM	3/19/2020	7:30 AM	416	411
3/23/2020	400	NO	n/a	n/a	n/a	N/A	3/23/2020	3:30 PM	3/23/2020	8:00 PM	418	410
4/13/2020	400	NO	n/a	n/a	n/a	N/A	4/13/2020	8:30 AM	4/13/2020	12:00 PM	416	410
							4/13/2020	3:15 PM	4/13/2020	4:45 PM	415	409
7/10/2020	400	YES	418	425	411	N/A	7/10/2020	2:30 PM	7/10/2020	7:45 PM	425	411
7/31/2020	400	NO	n/a	n/a	n/a	N/A	7/31/2020	2:45 AM	7/31/2020	2:45 AM	400	400
8/12/2020	400	YES	423	430	426	N/A	8/12/2020	4:15 PM	8/12/2020	5:15 PM	430	416
8/17/2020	330	YES	348	355	330	N/A	8/17/2020	9:30 PM	8/18/2020	1:30 AM	355	332
8/19/2020	330	YES	348	355	331	N/A	8/19/2020	10:45 AM	8/19/2020	3:00 PM	355	331
8/25/2020	330	YES	343	343	330	N/A	8/25/20250	6:45 PM	8/25/20250	9:15 PM	343	330
8/27/2020	400	NO	n/a	n/a	n/a	N/A	8/27/2020	9:15 PM	8/27/2020	10:15 PM	451	421
9/3/2020	400	NO	n/a	n/a	n/a	N/A	9/3/2020	10:30 PM	9/4/2020	12:00 AM	432	421
9/10/2020	400	YES	425	418	364	N/A	9/10/2020	9:30 AM	9/10/2020	10:45 AM	418	386
9/30/2020	400	YES	418	415	408	N/A	9/30/2020	2:30 AM	9/30/2020	3:30 AM	415	408
10/16/2020	400	YES	424	424	394	N/A	10/16/2020	12:00 PM	10/16/2020	3:00 PM	424	394
10/29/2020	400	YES	421	418	401	N/A	10/29/2020	12:00 PM	10/29/2020	3:30 PM	418	401
11/11/2020	400	YES	433	465	424	N/A	11/11/2020	9:15 PM	11/11/2020	11:30 PM	465	424
11/26/2020	400	YES	418	415	400	N/A	11/26/2020	6:45 AM	11/26/2020	8:15 AM	415	400
11/30/2020	400	YES	433	447	427	N/A	11/30/2020	12:30 PM	11/30/2020	3:45 PM	447	416
12/5/2020	400	YES	418	418	404	N/A	12/5/2020	6:00 AM	12/5/2020	8:15 PM	422	406
12/25/2020	400	NO	n/a	n/a	n/a	N/A	12/25/2020	3:00 AM	12/25/2020	3:45 PM	413	408

JAMAICA - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
3/23/2020	200	NO	n/a	n/a	n/a	N/A	3/23/2020	6:00 PM	3/23/2020	9:30 PM	219	210
7/10/2020	200	Yes	211	219	215	N/A	7/10/2020	2:30 PM	7/10/2020	6:30 PM	218	215
7/22/2020	200	NO	n/a	n/a	n/a	N/A	7/22/2020	9:15 PM	7/22/2020	10:15 PM	211	205
7/24/2020	200	NO	n/a	n/a	n/a	N/A	7/24/2020	11:45 AM	7/24/2020	2:15 PM	197	177
7/31/2020	150	Yes	175	177	173	N/A	7/31/2020	2:45 AM	7/31/2020	5:45 AM	177	171
7/31/2020	150	NO	n/a	n/a	n/a	N/A	7/31/2020	8:15 AM	7/31/2020	10:00 AM	166	161
8/27/2020	200	NO	n/a	n/a	n/a	N/A	8/27/2020	8:00 PM	8/27/2020	8:00 PM	202	202
9/10/2020	200	NO	n/a	n/a	n/a	N/A	9/10/2020	9:45 AM	9/10/2020	9:45 AM	200	200
10/16/2020	200	NO	n/a	n/a	n/a	N/A	10/16/2020	1:15 PM	10/16/2020	4:45 PM	220	212
11/1/2020	200	NO	n/a	n/a	n/a	N/A	11/30/2020	1:30 PM	11/30/2020	4:00 PM	216	209

NEWTOWN CREEK - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information							Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No (BQ)	CCT Flow at Start of BQ Throttling (MGD)	Did Plant Throttle? Yes/No (MPS)	MPS Flow at Start of MPS Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
1/25/2020	700	YES	627	YES	388	692	664	N/A	1/25/2020	2:45 PM	1/25/2020	4:00 PM	692	664
2/9/2020	700	YES	668	NO	n/a	n/a	n/a	N/A	n/a	n/a	n/a	n/a	n/a	n/a
2/27/2020	700	YES	647	NO	n/a	n/a	n/a	N/A	n/a	n/a	n/a	n/a	n/a	n/a
3/13/2020	700	YES	453	NO	n/a	n/a	n/a	N/A	n/a	n/a	n/a	n/a	n/a	n/a
3/19/2020	700	YES	722	YES	385	781	759	N/A	3/19/2020	4:30 AM	3/19/2020	8:15 AM	781	749
3/23/2020	700	YES	752	YES	391	807	797	N/A	3/23/2020	3:30 PM	3/23/2020	9:00 PM	807	778
4/13/2020	700	NO	n/a	NO	n/a	n/a	n/a	N/A	4/13/2020	6:00 AM	4/13/2020	6:00 AM	723	723
	700	YES	735	YES	395	765	754	N/A	4/13/2020	7:15 AM	4/13/2020	12:30 PM	770	753
	700	NO	n/a	NO	n/a	n/a	n/a	N/A	4/13/2020	3:45 PM	4/13/2020	4:00 PM	715	706
5/23/2020	700	YES	732	NO	n/a	n/a	n/a	N/A	n/a	n/a	n/a	n/a	n/a	n/a
6/3/2020	700	YES	731	YES	346	731	531	Cancelled Item No. 5872	6/3/2020	4:45 AM	6/3/2020	5:45 AM	731	531
6/28/2020	700	YES	732	YES	480	732	646	N/A	6/28/2020	8:00 PM	6/28/2020	8:45 PM	732	646
6/29/2020	700	YES	725	NO	n/a	n/a	n/a	N/A	6/29/2020	7:30 PM	6/29/2020	7:30 PM	725	725
7/1/2020	700	YES	732	NO	n/a	n/a	n/a	N/A	7/1/2020	1:45 PM	7/1/2020	1:45 PM	718	718
7/10/2020	700	YES	765	YES	396	769	743	N/A	7/10/2020	1:45 PM	7/10/2020	7:00 PM	749	743
7/22/2020	700	YES	718	YES	391	756	736	N/A	7/22/2020	7:45 PM	7/22/2020	9:45 PM	756	735
7/31/2020	700	YES	770	YES	385	770	754	N/A	7/31/2020	2:15 AM	7/31/2020	4:00 AM	770	750
8/3/2020	700	YES	763	NO	n/a	n/a	n/a	N/A	8/3/2020	10:15 PM	8/3/2020	10:45 PM	812	772
8/4/2020	700	YES	760	YES	396	804	780	N/A	8/4/2020	12:15 PM	8/4/2020	2:15 PM	820	776
8/17/2020	700	YES	n/a	YES	484	n/a	n/a	N/A	n/a	n/a	n/a	n/a	n/a	n/a
8/27/2020	700	YES	752	NO	n/a	n/a	n/a	N/A	8/27/2020	8:45 PM	8/27/2020	9:30 PM	752	744
9/3/2020	700	YES	784	YES	484	806	797	N/A	9/3/2020	9:30 PM	9/3/2020	11:45 PM	829	791
9/10/2020	700	YES	784	NO	n/a	n/a	n/a	N/A	9/10/2020	9:15 AM	9/10/2020	11:00 AM	783	741
	700	YES	803	YES	396	753	724	N/A	9/10/2020	9:30 PM	9/10/2020	11:00 PM	753	724
9/30/2020	700	YES	737	YES	484	787	768	N/A	9/30/2020	2:30 AM	9/30/2020	5:15 AM	787	768
10/12/2020	700	NO	n/a	NO	n/a	n/a	n/a	N/A	10/12/2020	1:00 PM	10/12/2020	1:00 PM	721	721
10/16/2020	700	YES	752	YES	381	774	739	N/A	10/16/2020	11:45 AM	10/16/2020	4:00 PM	774	740
10/29/2020	700	YES	722	YES	396	758	743	N/A	10/29/2020	11:30 AM	10/29/2020	4:15 PM	778	740
	700	YES	745	NO	n/a	n/a	n/a	N/A	10/29/2020	5:30 PM	10/29/2020	6:15 PM	764	742
10/30/2020	700	YES	729	NO	n/a	n/a	n/a	N/A	10/30/2020	8:00 AM	10/30/2020	10:00 AM	766	736
11/1/2020	700	NO	n/a	NO	n/a	n/a	n/a	N/A	11/1/2020	4:45 PM	11/1/2020	5:00 PM	723	713
11/11/2020	700	YES	759	YES	395	789	779	N/A	11/11/2020	9:30 PM	11/11/2020	10:45 PM	789	771
11/15/2020	700	YES	722	YES	352	722	630	N/A	11/15/2020	9:15 PM	11/15/2020	10:30 PM	722	630
11/23/2020	700	YES	620	NO	n/a	n/a	n/a	N/A	n/a	n/a	n/a	n/a	n/a	n/a
11/25/2020	700	YES	744	YES	381	825	765	N/A	11/25/2020	6:15 AM	11/26/2020	9:30 AM	825	763

NEWTOWN CREEK - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information							Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No (BQ)	CCT Flow at Start of B/Q Throttling (MGD)	Did Plant Throttle? Yes/No (MPS)	MPS Flow at Start of MPS Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
11/30/2020	700	YES	828	YES	391	828	751	N/A	11/30/2020	11:15 AM	11/30/2020	3:15 PM	828	748
12/5/2020	700	YES	783	NO	n/a	n/a	n/a	N/A	12/5/2020	5:45 AM	12/5/2020	8:45 AM	797	787
12/25/2020	700	YES	824	NO	n/a	n/a	n/a	N/A	n/a	n/a	n/a	n/a	n/a	n/a
	700	YES	794	YES	389	822	745	N/A	12/25/2020	3:00 AM	12/25/2020	4:45 PM	822	733
12/31/2020	700	YES	729	NO	n/a	n/a	n/a	N/A	n/a	n/a	n/a	n/a	n/a	n/a

NORTH RIVER - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
2/6/2020	340	YES	255	250	243	N/A	2/6/2020	2:50 AM	2/6/2020	5:32 AM	250	243
3/19/2020	340	NO	n/a	n/a	n/a	N/A	3/19/2020	7:00 AM	3/19/2020	8:15 AM	358	350
3/23/2020	340	YES	341	347	328	N/A	3/23/2020	4:45 PM	3/24/2020	12:15 AM	347	330
4/13/2020	340	YES	341	351	303	N/A	4/13/2020	8:00 AM	4/13/2020	12:45 PM	351	311
4/30/2020	340	NO	n/a	n/a	n/a	N/A	4/30/2020	10:45 PM	4/30/2020	11:00 PM	345	344
5/23/2020	340	NO	n/a	n/a	n/a	N/A	5/23/2020	2:00 PM	5/23/2020	2:15 PM	347	346
7/6/2020	340	YES	363	n/a	n/a	N/A	7/6/2020	5:45 PM	7/6/2020	8:45 PM	363	288
7/10/2020	340	YES	353	353	316	N/A	7/10/2020	3:00 PM	7/10/2020	8:45 PM	353	316
7/11/2020	340	YES	326	347	314	N/A	7/11/2020	3:15 PM	7/11/2020	5:30 PM	347	314
7/22/2020 - 7/23/2020	170 (3 MBPs o/s)	YES	191	205	189	N/A	7/22/2020	7:15 PM	7/23/2020	7:30 AM	205	188
	170 (3 MBPs o/s)	NO	n/a	n/a	n/a	N/A	7/23/2020	11:00 AM	7/23/2020	11:30 AM	193	190
7/31/2021	170 (2 MBPs o/s)	NO	n/a	n/a	n/a	N/A	7/31/2020	2:45 AM	7/31/2020	6:15 AM	283	272
8/3/2020 - 8/4/2020	170 (2 MBPs o/s)	YES	277	277	235	N/A	8/3/2020	10:00 PM	8/4/2020	1:15 AM	277	238
	170 (2 MBPs o/s)	YES	271	281	258	N/A	8/4/2020	12:15 PM	8/4/2020	6:30 PM	281	258
8/12/2020	340	YES	277	312	287	N/A	8/12/2020	4:30 PM	8/12/2020	7:30 PM	312	287
9/3/2020	340	YES	352	353	341	N/A	9/3/2020	10:15 PM	9/4/2020	12:15 AM	370	348
9/10/2020	340	YES	346	354	350	N/A	9/10/2020	9:30 PM	9/10/2020	11:15 PM	374	352
9/29/2020	340	NO	n/a	n/a	n/a	N/A	9/29/2020	3:00 AM	9/29/2020	4:15 AM	343	342
9/30/2020	340	YES	343	363	352	N/A	9/30/2020	2:30 AM	9/30/2020	7:30 AM	373	355
10/12/2020	340	NO	n/a	n/a	n/a	N/A	10/12/2020	12:45 PM	10/12/2020	1:15 PM	356	352
10/16/2020	340	YES	355	355	331	N/A	10/16/2020	12:15 PM	10/16/2020	7:30 PM	355	331
10/29/2020	340	YES	329	329	308	N/A	10/29/2020	1:15 PM	10/29/2020	9:30 PM	329	308
11/11/2020	340	YES	322	322	289	N/A	11/11/2020	9:15 PM	11/12/2020	12:00 AM	322	289
11/26/2020	340	YES	348	348	224	N/A	11/26/2020	6:00 AM	11/26/2020	11:45 AM	348	224
11/30/2020	340	YES	345	348	315	N/A	11/30/2020	11:15 AM	11/30/2020	5:30 PM	348	315
12/25/2020	340	YES	347	353	311	N/A	12/25/2020	3:15 AM	12/25/2020	8:45 AM	353	311
12/31/2020	340	NO	n/a	n/a	n/a	N/A	12/31/2020	9:30 AM	12/31/2020	10:00 AM	358	348

OAKWOOD BEACH - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
1/25/2020	79.8	NO	N/A	N/A	N/A	N/A	1/25/2020	4:00 PM	1/25/2020	4:00 PM	80	80
3/23/2020	79.8	NO	N/A	N/A	N/A	N/A	3/23/2020	6:15 PM	3/23/2020	9:30 PM	100	90
7/10/2020	79.8	NO	N/A	N/A	N/A	N/A	7/10/2020	2:00 PM	7/10/2020	2:30 PM	90	86
10/16/2020	79.8	NO	N/A	N/A	N/A	N/A	10/16/2020	2:30 PM	10/16/2020	3:15 PM	84	83
10/30/2020	79.8	NO	N/A	N/A	N/A	N/A	10/30/2020	9:45 AM	10/30/2020	10:00 AM	83	82
11/30/2020	79.8	NO	N/A	N/A	N/A	N/A	11/30/2020	1:00 PM	11/30/2020	1:15 PM	83	82

OWLS HEAD - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
1/25/2020	240	YES	248	248	236	N/A	43855	2:45 PM	1/25/2020	3:45 PM	248	236
2/6/2020	240	YES	244	244	208	N/A	2/6/2020	2:15 AM	2/6/2020	7:30 AM	244	210
2/11/2020	240	YES	244	245	243	N/A	2/11/2020	7:45 AM	2/11/2020	9:15 AM	245	243
2/13/2020	240	YES	248	248	235	N/A	2/13/2020	12:15 AM	2/13/2020	2:15 AM	248	235
3/19/2020	240	YES	244	244	236	N/A	3/19/2020	3:30 AM	3/19/2020	9:30 AM	244	236
3/23/2020	240	YES	241	242	241	N/A	3/23/2020	12:15 PM	3/23/2020	10:15 PM	242	241
4/13/2020	240	YES	240	247	241	N/A	4/13/2020	5:15 AM	4/13/2020	1:45 PM	247	241
	240	YES	244	241	237	N/A	4/13/2020	2:45 PM	4/13/2020	5:45 PM	244	237
4/24/2020	240	YES	247	247	242	N/A	4/24/2020	10:45 AM	4/24/2020	12:45 PM	247	242
4/30/2020	240	YES	244	242	239	N/A	4/30/2020	10:00 PM	4/30/2020	11:45 PM	242	239
5/8/2020	240	YES	241	241	235	N/A	5/8/2020	10:15 PM	5/9/2020	1:15 AM	241	235
5/23/2020	240	YES	243	243	241	N/A	5/23/2020	12:00 PM	5/23/2020	1:45 PM	243	241
6/3/2020	240	YES	240	240	240	N/A	6/3/2020	4:00 AM	6/3/2020	7:00 AM	240	240
6/3/2020	240	YES	250	250	243	N/A	6/3/2020	9:45 PM	6/3/2020	11:15 PM	250	243
6/5/2020	240	YES	241	241	240	N/A	6/5/2020	1:45 AM	6/5/2020	3:15 AM	241	240
6/6/2020	240	YES	230	230	179	N/A	6/6/2020	1:45 AM	6/6/2020	3:30 AM	230	179
6/11/2020	240	YES	242	242	241	N/A	6/11/2020	3:30 PM	6/11/2020	5:15 PM	242	241
7/6/2020	240	YES	240	241	232	N/A	7/6/2020	5:15 PM	7/6/2020	8:00 PM	241	232
7/10/2020	240	YES	242	248	241	N/A	7/10/2020	12:30 PM	7/10/2020	7:45 PM	248	241
7/22/2020	240	YES	244	248	244	N/A	7/22/2020	8:30 AM	7/22/2020	10:00 AM	248	244
7/24/2020	240	YES	247	247	241	N/A	7/24/2020	10:45 AM	7/24/2020	2:00 PM	247	241
7/31/2020	240	YES	240	243	242	N/A	7/31/2020	1:45 AM	7/31/2020	4:15 AM	243	242
8/3/2020	240	YES	240	240	228	N/A	8/3/2020	10:00 PM	8/3/2020	11:30 PM	248	241
8/4/2020	240	YES	248	247	238	N/A	8/4/2020	12:30 PM	8/4/2020	3:45 PM	247	238
8/19/2020	180 (1 PST o/s)	YES	188	187	180	N/A	8/19/2020	10:45 AM	8/19/2020	1:00 PM	187	180
8/27/2020	240	YES	243	244	243	N/A	8/27/2020	9:00 AM	8/27/2020	10:30 AM	244	243
9/1/2020	180 (interim limit)	YES	180	181	178	N/A	9/1/2020	5:45 AM	9/1/2020	8:00 AM	181	178
9/3/2020	180 (interim limit)	YES	185	188	184	N/A	9/3/2020	8:45 PM	9/4/2020	2:00 AM	188	184

OWLS HEAD - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
9/10/2020	180 (interim limit)	YES	184	183	182	N/A	9/10/2020	8:45 PM	9/11/2020	1:45 AM	184	182
9/29/2020	180 (interim limit)	YES	185	184	181	N/A	9/29/2020	11:00 PM	9/30/2020	8:45 AM	185	181
10/12/2020	180 (interim limit)	YES	187	188	183	N/A	10/12/2020	7:45 AM	10/12/2020	9:45 PM	208	184
	180 (interim limit)	YES	187	208	185	N/A						
10/16/2020	180 (interim limit)	YES	183	184	167	N/A	10/16/2020	11:15 AM	10/16/2020	11:15 PM	184	167
10/26/2020	180 (interim limit)	YES	181	181	178	N/A	10/26/2020	2:30 PM	10/26/2020	4:15 PM	181	178
10/29/2020 - 10/30/2020	180 (interim limit)	YES	183	184	181	N/A	10/29/2020	10:15 AM	10/30/2020	2:45 AM	184	181
	180 (interim limit)	YES	181	184	179	N/A	10/30/2020	6:00 AM	10/30/2020	3:30 PM	184	179
11/1/2020	180 (interim limit)	YES	188	188	182	N/A	11/1/2020	3:00 PM	11/1/2020	8:45 PM	188	182
11/11/2020 - 11/12/2020	180 (interim limit)	YES	183	189	178	N/A	11/11/2020	3:45 PM	11/12/2020	12:30 AM	189	178
	180 (interim limit)	YES	182	182	173	N/A	11/12/2020	8:30AM	11/12/2020	11:45 AM	182	173
	180 (interim limit)	YES	184	184	174	N/A	11/12/2020	6:45 PM	11/12/2020	8:45 PM	184	174
11/15/2020	180 (interim limit)	YES	184	184	179	N/A	11/15/2020	8:00 PM	11/16/2020	12:00 AM	184	179
11/23/2020	180 (interim limit)	YES	181	183	179	N/A	11/23/2020	6:00 AM	11/23/2020	11:30 AM	183	179
11/26/2020	240	YES	241	243	240	N/A	11/26/2020	5:45 AM	11/26/2020	7:45 AM	243	240
11/30/2020	180 (interim limit)	YES	180	181	180	N/A	11/30/2020	10:15 AM	11/30/2020	5:30 PM	181	180
12/5/2020	180 (interim limit)	YES	181	186	183	N/A	12/5/2020	4:00 AM	12/5/2020	3:45 PM	186	183
12/14/2020	180 (interim limit)	YES	182	182	181	N/A	12/14/2020	1:45 PM	12/14/2020	6:15 PM	182	181
12/24/2020 - 12/25/2020	180 (interim limit)	YES	183	183	180	N/A	12/24/2020	11:45 PM	12/25/2020	2:45 PM	183	180
12/31/2020	180 (interim limit)	YES	184	184	181	N/A	12/31/2020	7:45 AM	12/31/2020	2:15 PM	184	181

PORT RICHMOND - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
1/25/2020	120	YES	121	120	120	N/A	1/25/2020	3:00 PM	1/25/2020	3:30 PM	121	120
2/6/2020	90 (2 MSPs o/s)	NO	n/a	n/a	n/a	N/A	2/6/2020	3:00 AM	2/6/2020	3:30 AM	98	94
2/11/2020	90 (2 MSPs o/s)	NO	n/a	n/a	n/a	N/A	2/11/2020	8:00 AM	2/11/2020	8:15 AM	91	91
3/23/2020	120	NO	n/a	n/a	n/a	N/A	3/23/2020	6:00 PM	3/23/2020	6:00 PM	120	120
	120	NO	n/a	n/a	n/a	N/A	3/23/2020	8:45 PM	3/23/2020	9:00 PM	125	124
7/10/2020	120	YES	133	133	129	N/A	7/10/2020	1:45 PM	7/10/2020	7:15 PM	133	129
9/3/2020	120	YES	129	133	131	N/A	9/3/2020	9:30 PM	9/3/2020	10:45 PM	133	131
9/10/2020	120	YES	135	135	133	N/A	9/10/2020	9:30 PM	9/10/2020	10:45 PM	135	133
10/16/2020	120	NO	n/a	n/a	n/a	N/A	10/16/2020	1:00 PM	10/16/2020	1:45 PM	121	121
10/29/2020	120	NO	n/a	n/a	n/a	N/A	10/29/2020	12:00 PM	10/29/2020	12:00 PM	120	120
10/30/2020	120	NO	n/a	n/a	n/a	N/A	10/30/2020	9:00 AM	10/30/2020	10:00 AM	121	120
11/30/2020	120	NO	n/a	n/a	n/a	N/A	11/30/2020	12:15 PM	11/30/2020	1:00 PM	122	121

RED HOOK - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
1/25/2020	120	YES	114	121	117	N/A	1/25/2020	1:45 PM	1/25/2020	5:45 PM	121	117
2/6/2020	120	YES	122	127	122	N/A	2/6/2020	2:30 AM	2/6/2020	5:00 AM	127	122
2/13/2020	120	YES	126	127	122	N/A	2/13/2020	12:15 AM	2/13/2020	1:15 AM	127	123
2/27/2020	120	YES	124	124	121	N/A	2/27/2020	1:45 AM	2/27/2020	3:00 AM	124	121
3/19/2020	120	YES	125	126	123	N/A	3/19/2020	3:45 AM	3/19/2020	9:15 AM	126	123
3/23/2020	120	YES	124	128	126	N/A	3/23/2020	3:15 PM	3/23/2020	10:00 PM	128	126
4/13/2020	120	YES	125	126	125	N/A	4/13/2020	5:45 AM	4/13/2020	6:45 AM	126	125
	120	YES	126	130	125	N/A	4/13/2020	7:45 AM	4/13/2020	1:30 PM	130	125
4/21/2020	120	NO	n/a	n/a	n/a	N/A	4/21/2020	4:00 PM	4/21/2020	4:00 PM	120	120
4/21/2020	120	NO	n/a	n/a	n/a	N/A	4/24/2020	10:45 AM	4/24/2020	10:45 AM	124	124
4/30/2020	120	NO	n/a	n/a	n/a	N/A	4/30/2020	10:15 AM	4/30/2020	11:00 AM	126	124
	120	YES	126	126	125	N/A	4/30/2020	10:00 PM	4/30/2020	11:00 PM	127	125
5/23/2020	120	YES	126	126	123	N/A	5/23/2020	12:00 PM	5/23/2020	2:15 PM	126	123
6/3/2020	120	YES	125	125	125	N/A	6/3/2020	4:15 AM	6/3/2020	6:30 AM	125	125
6/5/2020	120	YES	124	124	124	N/A	6/5/2020	2:00 AM	6/5/2020	2:15 AM	124	124
6/29/2020	120	YES	126	126	123	N/A	6/29/2020	7:00 PM	6/29/2020	9:00 PM	126	123
7/1/2020	120	YES	126	129	125	N/A	7/1/2020	1:00 PM	7/1/2020	3:30 PM	129	125
7/6/2020	120	YES	126	127	124	N/A	7/6/2020	4:45 PM	7/6/2020	7:45 PM	127	124
7/10/2020	120	YES	126	126	122	N/A	7/10/2020	1:45 PM	7/10/2020	7:45 PM	126	122
7/22/2020	120	YES	125	127	123	N/A	7/22/2020	7:30 PM	7/22/2020	10:30 PM	127	123
7/24/2020	120	YES	126	127	124	N/A	7/24/2020	10:30 AM	7/24/2020	1:00 PM	127	124
7/31/2020	120	YES	126	126	122	N/A	7/31/2020	2:00 AM	7/31/2020	4:45 AM	126	122
8/3/2020	120	YES	126	126	124	N/A	8/3/2020	9:45 PM	8/3/2020	11:30 PM	126	124
8/4/2020	120	YES	132	125	125	N/A	8/4/2020	2:00 PM	8/4/2020	3:00 PM	125	125
8/18/2020	120	YES	126	126	120	N/A	8/18/2020	4:45 AM	8/18/2020	6:00 AM	126	120
8/27/2020	12	NO	n/a	n/a	n/a	N/A	8/27/2020	10:00 PM	8/27/2020	10:00 PM	126	126
9/3/2020	120	YES	124	127	124	N/A	9/3/2020	9:15 PM	9/4/2020	12:45 AM	127	124

RED HOOK - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
9/10/2020	120	YES	123	123	122	N/A	9/10/2020	5:45 AM	9/10/2020	7:15 AM	123	122
	120	YES	97	136	125	N/A	9/10/2020	8:45 AM	9/10/2020	11:30 AM	136	125
	120	YES	125	126	125	N/A	9/10/2020	9:00 PM	9/11/2020	12:15 AM	126	125
9/21/2020	120	NO	n/a	n/a	n/a	N/A	9/21/2020	4:00 PM	9/21/2020	4:00 PM	120	120
9/24/2020	120	NO	n/a	n/a	n/a	N/A	9/24/2020	10:45 AM	9/24/2020	10:45 AM	124	124
9/30/2020	120	YES	127	127	123	N/A	9/30/2020	2:15 AM	9/30/2020	7:00 AM	127	123
	120	NO	n/a	n/a	n/a	N/A	9/30/2020	10:15 AM	9/30/2020	11:00 AM	126	124
10/12/2020	120	YES	125	125	122	N/A	10/12/2020	12:45 PM	10/12/2020	1:30 PM	125	122
10/16/2020	120	YES	128	128	126	N/A	10/16/2020	11:45 AM	10/16/2020	6:00 PM	128	126
10/29/2020	120	YES	127	127	123	N/A	10/29/2020	11:00 AM	10/29/2020	7:45 PM	127	123
10/30/2020	120	YES	125	124	122	N/A	10/30/2020	8:30 AM	10/30/2020	10:45 AM	124	122
11/1/2020	120	YES	125	125	121	N/A	11/1/2020	3:45 PM	11/1/2020	5:00 PM	125	121
11/11/2020	120	YES	125	125	122	N/A	11/11/2020	8:30 PM	11/11/2020	10:15 PM	125	122
11/15/2020	90 (1 PST o/s)	YES	100	114	107	N/A	11/15/2020	9:15 PM	11/16/2020	12:15 AM	114	107
11/23/2020	120	YES	124	124	121	N/A	11/23/2020	6:30 AM	11/23/2020	8:00 AM	124	121
11/26/2020	120	YES	121	124	120	N/A	11/26/2020	6:00 AM	11/26/2020	8:30 AM	124	120
11/30/2020	120	YES	127	127	122	N/A	11/30/2020	11:00 AM	11/30/2020	3:30 PM	127	122
12/5/2020	120	YES	127	127	124	N/A	12/5/2020	5:15 AM	12/5/2020	10:15 AM	127	124
12/25/2020	120	YES	128	127	122	N/A	12/25/2020	3:00 AM	12/25/2020	5:45 AM	127	122
12/31/2020	120	YES	125	125	122	N/A	12/31/2020	8:30 AM	12/31/2020	11:15 AM	125	122

ROCKAWAY - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
NO EVENTS												

TALLMAN ISLAND - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information					Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
1/25/2020	160	YES	161	164	162	N/A	1/25/2020	3:30 PM	1/25/2020	5:15 PM	164	162
3/19/2020	160	NO	160	160	157	N/A	3/19/2020	6:15 AM	3/19/2020	8:00 AM	160	157
3/23/2020	160	YES	161	164	162	N/A	3/23/2020	4:45 PM	3/23/2020	9:00 PM	164	162
4/13/2020	160	YES	163	164	161	N/A	4/13/2020	9:45 AM	4/13/2020	1:30 PM	164	161
	160	NO	162	164	160	N/A	4/13/2020	2:45 PM	4/13/2020	4:45 PM	164	160
7/10/2020	160	NO	165	170	165	N/A	7/10/2020	3:15 PM	7/10/2020	6:45 PM	170	164
8/17/2020	160	YES	164	166	163	N/A	8/17/2020	10:00 PM	8/17/2020	11:00 PM	166	163
9/3/2020	160	NO	165	168	164	N/A	9/3/2020	10:00 PM	9/4/2020	12:00 AM	168	164
9/10/2020	160	NO	n/a	n/a	n/a	N/A	9/10/2020	9:30 AM	9/10/2020	10:45 AM	169	165
10/16/2020	160	NO	165	166	160	N/A	10/16/2020	12:30 PM	10/16/2020	5:45 PM	166	160
10/29/2020	160	NO	165	167	163	N/A	10/29/2020	12:15 PM	10/29/2020	4:00 PM	167	163
11/26/2020	160	YES	n/a	n/a	n/a	N/A	11/26/2020	8:15 AM	11/26/2020	9:00 AM	165	163
11/30/2020	160	YES	168	173	168	N/A	11/30/2020	12:15 PM	11/30/2020	4:00 PM	173	167
12/5/2020	160	NO	n/a	n/a	n/a	N/A	12/5/2020	6:45 AM	12/5/2020	8:30 AM	163	161

WARDS ISLAND - WET WEATHER THROTTLING SUMMARY

		Plant Throttling Information							Critical Wet Weather Event					
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did MGC Throttle? Yes/No	Flow at Start of MGC Throttling (MGD)	Did BGC Throttle? Yes/No	Flow at Start of BGC Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)
1/25/2020	550	YES	523	YES	526	524	514	N/A	1/25/2020	3:00 PM	1/25/2020	4:30 PM	524	514
2/11/2021	550	NO	n/a	NO	n/a	n/a	n/a	N/A	2/11/2020	8:00 AM	2/11/2020	8:00 AM	563	563
3/19/2020	550	YES	555	NO	n/a	n/a	n/a	N/A	3/19/2020	5:30 AM	3/19/2020	6:45 AM	567	559
4/13/2020	550	YES	553	YES	558	562	536	N/A	4/13/2020	9:00 AM	4/13/2020	11:45 AM	562	542
4/30/2020	550	NO	n/a	NO	n/a	n/a	n/a	N/A	4/30/2020	9:00 AM	4/30/2020	9:15 AM	600	583
7/10/2020	550	YES	562	YES	554	562	514	N/A	7/10/2020	2:15 PM	7/10/2020	8:00 PM	562	516
7/22/2020	550	YES	425	YES	554	502	495	N/A	7/22/2020	7:45 PM	7/22/2020	8:00 PM	502	495
8/17/2020	550	YES	528	YES	528	554	528	N/A	8/17/2020	8:45 PM	8/17/2020	11:15 PM	557	535
8/19/2020	550	YES	530	YES	530	547	538	N/A	8/19/2020	10:45 AM	8/19/2020	11:30 AM	547	538
8/25/2020	550	YES	n/a	NO	n/a	n/a	n/a	N/A	n/a	n/a	n/a	n/a	n/a	n/a
8/27/2020	550	NO	n/a	NO	n/a	n/a	n/a	N/A	8/27/2020	9:00 PM	8/27/2020	9:15 PM	591	585
9/3/2020	550	YES	511	YES	519	578	561	N/A	9/3/2020	9:45 PM	9/3/2020	11:15 PM	578	561
9/10/2020	550	NO	n/a	NO	n/a	n/a	n/a	N/A	9/10/2020	9:00 PM	9/10/2020	10:00 PM	606	590
9/30/2020	550	NO	n/a	NO	n/a	n/a	n/a	N/A	9/30/2020	2:30 AM	9/30/2020	3:15 AM	599	583
	550	NO	n/a	NO	n/a	n/a	n/a	N/A	9/30/2020	4:15 AM	9/30/2020	4:45 AM	571	563
10/16/2020	550	YES	590	YES	650	654	584	N/A	10/16/2020	12:15 PM	10/16/2020	3:15 PM	654	584
10/29/2020	550	YES	572	NO	n/a	n/a	n/a	N/A	10/29/2020	11:00 AM	10/29/2020	12:00 PM	577	562
									10/29/2020	1:30 PM	10/29/2020	2:15 PM	554	553
11/11/2020	550	YES	545	YES	544	550	544	N/A	11/11/2020	9:00 PM	11/11/2020	10:00 PM	550	544
11/23/2020	550	NO	n/a	NO	n/a	n/a	n/a	N/A	11/23/2020	7:45 AM	11/23/2020	8:15 AM	585	558
11/26/2020	550	NO	n/a	NO	n/a	n/a	n/a	N/A	11/26/2020	7:00 AM	11/26/2020	8:15 AM	613	583
11/30/2020	550	YES	575	YES	568	586	568	N/A	11/30/2020	12:15 PM	11/30/2020	3:45 PM	586	564
12/5/2020	550	NO	n/a	NO	n/a	n/a	n/a	N/A	12/5/2020	6:45AM	12/5/2020	7:45 AM	671	565
12/25/2020	550	YES	n/a	YES	566	n/a	n/a	N/A	12/25/2020	3:15 AM	12/25/2020	3:30 AM	566	566
12/31/2020	550	YES	n/a	YES	566	n/a	n/a	N/A	12/31/2020	8:00 AM	12/31/2020	8:00 AM	551	551

Appendix 3.3: ESTIMATION OF WET-WEATHER CAPTURE

Appendix 3.3.1: Estimation Of Wet-Weather Capture

This section provides a description of analyses used to calculate the wet-weather capture of combined-sewage (CS) flow and associated floatables at the New York City (NYC) treatment facilities (referred to as Wastewater Resource Recovery Facilities, WRRFs) during calendar year (CY) 2019. Section 3.1 describes the difference between runoff capture and combined-sewage capture. Section 3.2 discusses the scenarios used to evaluate the capture. Section 3.3 summarizes the modeling approach: InfoWorks ICM is an advanced integrated catchment modeling software used to calculate flow volume capture for CY2019 at all drainage areas served wholly or partially by combined sewers. Section 3.4 describes the CY2019 wet-weather combined-sewage percent capture results for these drainage areas. References are listed in Section 3.5.

The Environmental Protection Agency (EPA) issued the current guidance pertaining to the intent and calculation of "combined-sewage capture" in 1995. Prior to that time, a different parameter, known as "runoff capture", was used to assess the operation of the collection/treatment system. As detailed in a subsequent section, runoff capture measured the ratio of runoff treated to runoff collected in a sewer system. For the NYC WRRFs, historically speaking, the runoff capture values were typically about 15 percentage points less than the corresponding CS capture values. The runoff capture remains a useful parameter in the calculation of floatables capture. CS capture has replaced runoff capture as the pertinent measure of flow-capture performance, and as such, runoff capture is no longer reported. However, runoff capture is used in the calculation of floatables capture.

Since 1998, capture of CS floatables has also been calculated and reported. Initially, the basis for this measurement was the floatables passing into combined sewers from the catch basins (see Figure 3-1), but because the catch basins themselves are considered part of the sewer system, an estimate of catch basin retention was added to the calculation of the floatables-capture. As a result, the basis for floatables capture is now what enters the catch basins.

Historically, capture of flow and floatables has been simulated and reported for three different scenarios. The first simulation scenario reflects actual operation of

the collection/treatment system (in terms of the flow rates treated at a WRRF during wet weather) and the actual rainfall (and tides) affecting the system during the subject, calendar-year period. The results of this simulation scenario indicate the actual capture performance for the period.

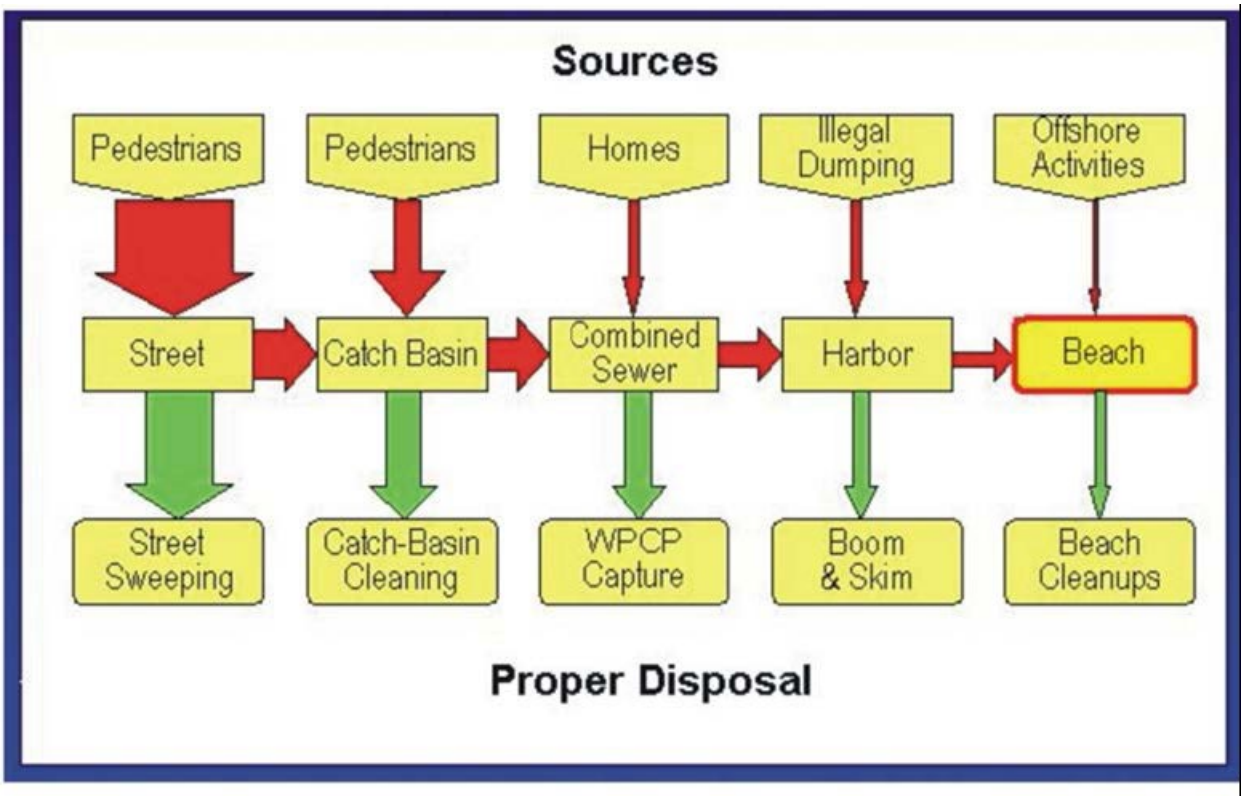


Figure 3-1. Sources and Fate of Floatables in New York City of New York DEP

The methodology for calculation of flow capture has evolved historically with the advent of improved modeling tools and increasing computing power. Initially, flow capture was estimated using the "Statistical Method" (Hydroscience, 1978), an approach relying on drainage area/runoff-coefficient information from a calibrated sewer-system rainfall-runoff model (such as the EPA's Storm Water Management Model, SWMM), but which can be used without the complicated set-up and computational runtimes associated with those models. Finally, as part of the CSO Long Term Control Plan (LTCP) project, DEP adopted an InfoWorks modeling framework to support facility-planning analyses citywide. InfoWorks is a state-of-the-art hydrology and hydraulics linked model that will provide the most sophisticated and accurate representation of the NYC drainage areas. Although model set up and calibration do require extensive effort, advancements in computing have lessened run-time requirements so that the use of these models becomes reasonable for planning and design-level analyses.

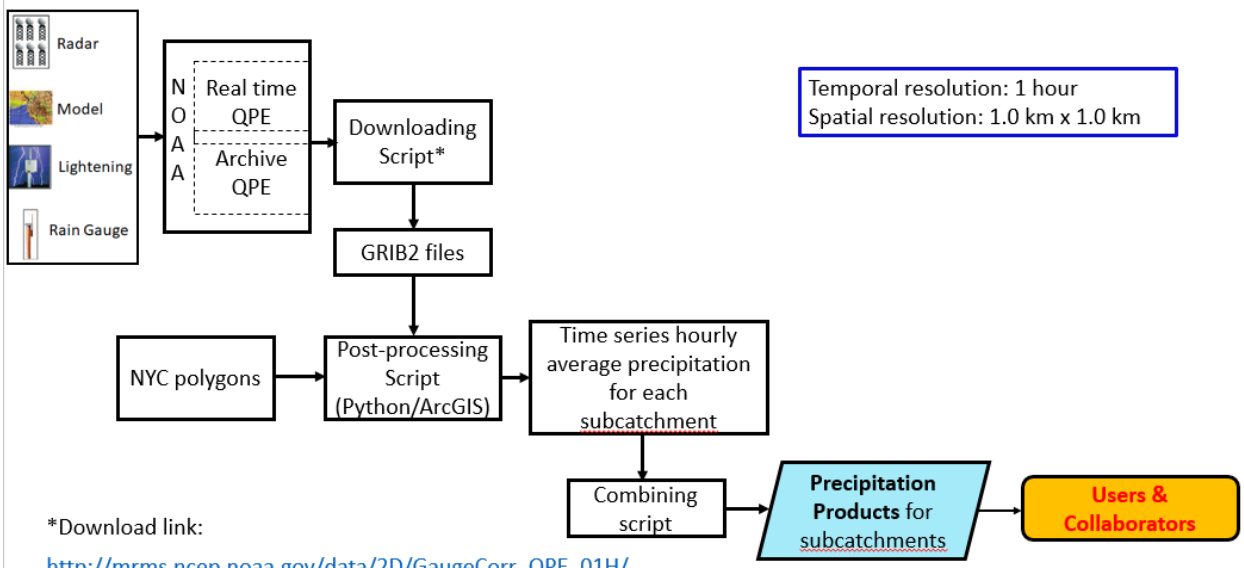
For 2019, the percent-capture analyses utilize the InfoWorks modeling framework for all drainage areas wholly or partially served by combined sewers. Section 3.3 provides a more detailed discussion of the InfoWorks model.

InfoWorks models constructed for various WRRF drainage areas have undergone a major recalibration process in the 2009-11 period and the DEP had submitted a detailed report on this recalibration effort to New York State DEC in June 2012 along with additional calibration and validation being done as part of developing the CSO Long Term Control Plans (LTCPs). DEP adopted the updated models to support the capture calculations for CY2019. Table 3-1 shows these statistics for the new typical rainfall conditions used in the current year. Based on the model updates and the use of different standard rainfall conditions, the percent capture information presented in this report may not be directly comparable with those reported in previous calendar years.

For the CY2019 analysis, a new rainfall dataset from NOAA/NSSL called Quantitative Precipitation Estimates (QPE) was used instead of DEP or NOAA rain gauges, as have been used in the past. This decision was made for several reasons. First, the NOAA rain gauges (CPK, JFK, LGA, and EWR) are often very far from the WRRFs model areas to which they are applied. Second, the DEP WRRF rain gauges frequently suffer from outages and other reporting issues, leading to incomplete or inaccurate datasets. Therefore, the new NOAA/NSSL QPE data was used, which is described below:

- The new NOAA/NSSL product provides spatially distributed, hourly estimates of precipitation is based on multiple radars, satellite and numerical weather prediction models, surface and upper air observations, lightning detection systems and rain gauges. In addition to hourly, QPE is available in other time increments (such as 3 hr, 6 hr, 12 hr, daily, 48 hr and 72 hr) and in spatial resolution of roughly 1 km x 1 km.
- Most common application of radar QPE data is to simulate or predict flash flood events using rainfall-runoff models [Willie, D. et al. 2017; Zhang et al. 2016; Rafieeinasab et al. 2015; Chen and Chandrasekar 2015].
- Validation of the high resolution radar QPE data was made against the ground-based precipitation data obtained from the NOAA stations rain gauge data: Central Park (CPK), Newark Airport (EWR), JFK Airport (JFK) and LaGuardia Airport (LGA).
- The high resolution and broad spatial coverage of the radar QPE data provides more realistic forcing at the time scales relevant to the CY2019 wet-weather capture modeling analysis.
- Processing methodology for NOAA/NSSL QPE data:

Processing Flowchart



*Download link:

http://mrms.ncep.noaa.gov/data/2D/GaugeCorr_QPE_01H/

http://mtarchive.geol.iastate.edu/2018/01/01/mrms/ncep/GaugeCorr_QPE_01H/

Table 3-1 Annual NYC drainage areas rainfall Statistics, 2019[4]

WRRF Drainage Areas[1]	Period	Number of Storms Avg.	Rainfall (in)			Storm Intensity (inch/hr)		Storm duration (hour)		Delta[2] (hour)	
			Annual total	Storm Avg.	COV[3]	Avg.	COV[3]	Avg.	COV[3]	Avg.	COV[3]
26W	2019	162	49.98	0.31	1.29	0.0426	0.86	6.38	0.96	54.2	0.94
BB	2019	168	49.07	0.29	1.32	0.0424	1.02	6.3	1.01	52.26	0.83
CI	2019	156	53.64	0.34	1.25	0.547	1.17	6.26	0.98	56.3	0.86
HP	2019	177	53.22	0.3	1.41	0.0416	1.06	6.37	1.02	49.59	0.86
JA	2019	158	49.71	0.31	1.27	0.0433	0.9	6.65	0.94	55.58	0.96
NC	2019	168	51.31	0.31	1.29	0.0492	1.17	6.14	1	52.26	0.87
NR	2019	164	48.73	0.3	1.37	0.0393	0.92	6.3	1	53.47	0.88
OH	2019	165	54.44	0.33	1.29	0.0508	1.06	6.13	1.02	53.14	0.9
PR	2019	163	59.03	0.36	1.3	0.0547	1.28	6.48	1.01	53.8	0.84
RH	2019	162	49.55	0.31	1.26	0.0471	1.03	6.3	0.99	54.13	0.9
TI	2019	169	51.78	0.31	1.36	0.0411	1.04	6.63	0.99	51.88	0.87
WI	2019	169	52.88	0.31	1.32	0.0452	1.12	6.53	1	51.95	0.85
[1]NOAA/NSSL Product - QPE data											
[2]Delta refers to time between storms midpoints											
[3]Coefficient of Variation (average/standard deviation)											
[4]Statistics calculated using EPA's SYNOP package with inputs for interevent time of 4 hours and zero minimum rainfall depth											

Table 3-1: Annual NYC Rainfall Statistics, 2018 (5)

Gage Location [1]	Period	Number of Storms Avg.	Liquid-Equivalent Precipitation (Rainfall) (inch)			Storm Intensity (inch/hr)		Storm Duration (hour)		Delta [2] (hour)	
			Annual Total	Storm Avg.	Storm COV [3]	Avg.	COV [3]	Avg.	COV [3]	Avg.	COV [3]
Central Park	2018	144	63.43	0.44	1.33	0.063	1.34	7.18	0.99	60.08	0.87
LaGuardia Airport	2018	140	57.55	0.41	1.29	0.0581	1.14	6.83	1.03	61.81	0.92
JFK Airport	2018	146	56.17	0.38	1.35	0.0654	1.66	6.56	1.13	59.26	0.91
Newark Airport	2018	148	58.18	0.39	1.39	0.0552	1.1	6.55	1.06	58.45	0.99
JFK Airport	"Standard" 2008	130	46.25	0.36	1.48	0.0565	1.14	5.86	1.06	67.90	1.02
Central Park	1955-2018	117	47.35	0.40	1.56	0.0586	1.35	6.53	1.03	75.52	1.11
LaGuardia Airport	1955-2018	116	43.15	0.37	1.56	0.0572	1.40	6.30	1.02	76.07	1.02
JFK Airport	1970-2018	115	42.37	0.37	1.52	0.0571	1.36	6.18	1.03	76.67	1.01
Newark Airport	1955-2018	118	44.33	0.37	1.58	0.0558	1.42	6.38	1.04	74.80	1.01
NYC Metro [4]	Historical	-	-	-	-	0.0560	1.35	-	-	-	-

- National Oceanic and Atmospheric Administration Data Center rain gauges
- Delta refers to time between storms midpoints
- Coefficient of Variation (average/standard deviation)
- Values reported as "Typical for NYC Metropolitan Area, circa 1950 through 1976" (from Hydroscience 1978)
- Statistics calculated using EPA's SYNOP package with inputs for interevent time of 4 hours and zero minimum rainfall depth

Appendix 3.3.2: Definitions Of Combined-Sewage Capture And Runoff Capture

Previous EPA guidance defined wet-weather capture at combined-sewer treatment facilities in terms of the ratio of runoff captured to the total runoff generated. This ratio, expressed as a percentage, is herein referred to as "runoff capture". For the purposes of this study, the runoff capture is estimated as the ratio of total treated volume of runoff from combined-sewer areas (the sum of the runoff treated by the plant and the runoff treated by any off-line storage facilities) to the total volume of runoff generated from combined-sewer areas during wet weather. More recent EPA guidance (EPA 1995) suggests an alternate definition of capture in terms of both runoff and sanitary sewage. One of the Presumptive Approach criteria is:

> *"The elimination or the capture for treatment of no less than 85% by volume of the combined sewage collected in the CSS [combined-sewer system] during precipitation events on a system-wide annual basis."*

This definition of capture, herein referred to as "combined-sewage capture," is the ratio of CS volume captured at the WRRF to the total runoff and sanitary sewage entering the combined-sewer system during wet-weather periods.

Figure 3-2 presents a schematic representation of both runoff capture and CS capture. With runoff capture, WRRF flow rates exceeding average diurnal (dry-weather) sanitary flows during wet-weather periods were assumed to represent captured runoff. In reality, the flow in the sewer system is a mixture of runoff and sanitary flow, and a portion of CSOs is sanitary in nature. The combined-sewage capture definition takes into account the sanitary flow already in the sewer system during wet weather, and hence is a more realistic measure of the capture at WRRFs during wet-weather periods.

In NYC, values for CS capture are typically about 15 percent points higher than those for runoff capture. EPA's CSO guidance (EPA 1995) has established a target criterion of 85 percent CS capture for the presumptive approach to CSO control.

Appendix 3.3.3: Percent-Capture Evaluation – Two Scenarios

Wet-weather capture depends upon the particular weather patterns within the subject period, the state of a sewer system and wet-weather operation of the WRRFs. Capture values tend to increase when storm patterns produce sustained, low-level flows to the plant. Capture values also increase when sewer-system restrictions are eliminated and flows to the WRRF are maximized. If the interceptors and combined sewers are not surcharged, when the plant inflows reach 2XDDWF levels in certain drainage areas, those may provide some additional in-line

storage for wet-weather flow and, as such, can increase the wet weather capture rate. Although it is important to record the actual capture achieved at WRRFs each year, it is also useful to isolate the effect of the uncontrollable, year-to-year rainfall variations from the controllable aspects related to the operation and maintenance of the collection system and treatment plant. To address these issues, the model results presented herein represent two different scenarios:

- the "Actual" captures, reflecting the "state and operation of the collection/ treatment system" during the subject period, as well as the actual rainfall and tidal conditions during the subject period,
- the "Standardized" captures, reflecting the "state and operation of the collection/treatment system" during the subject period, but with rainfall and tide conditions representing the standardized (typical) rainfall year, and

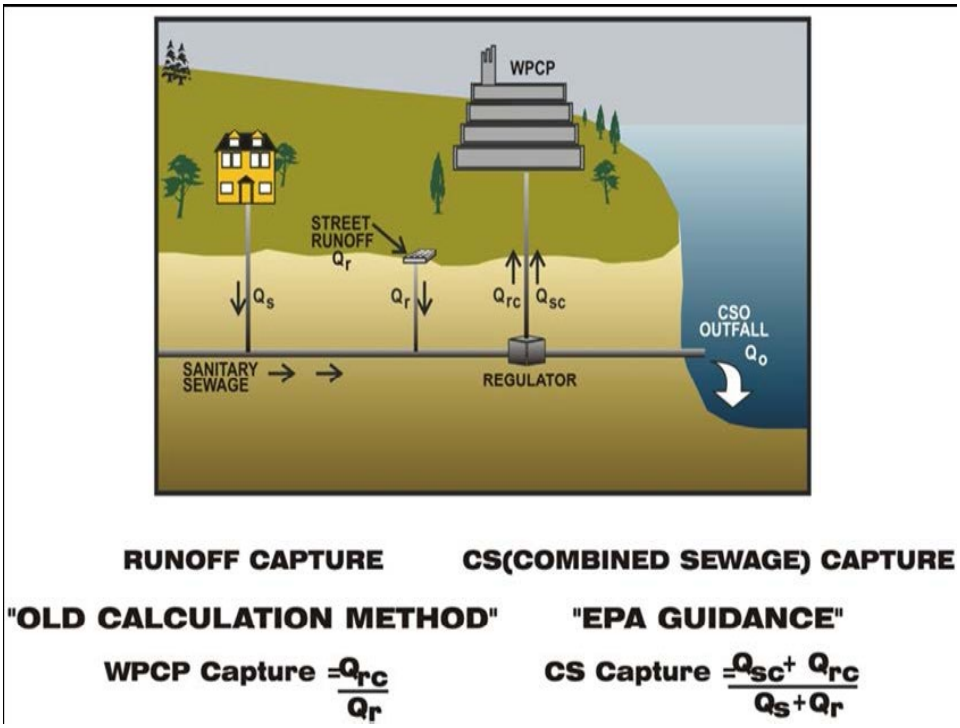


Figure 3-2. Wet Weather Flow Capture at WRRF

Appendix 3.3.4: Tools To Calculate Wet-Weather Flow Capture

Although the definitions presented in Section 3.1 and the equations on Figure 3-2 are relatively simple, actual application to calculate CS capture can be rather complicated. Because the capture must be evaluated over a long-term (annual)

period, and with hundreds of potential CSO outfalls City-wide, direct measurements of all parameters would be impractical. Furthermore, measurements of flow and rainfall distribution over a large geographical area have proved to be less than reliable. A more practical approach is to estimate the terms presented on Figure 3-2 using calibrated sewer-system models to simulate (instead of directly measuring through monitoring) system performance during the subject period. The following section describes the modeling approach applied for 2019 calculations, namely, InfoWorks ICM. As indicated earlier, InfoWorks was adopted for citywide use and has been calibrated for all service areas that are wholly or partially served by combined sewers.

Appendix 3.3.5: InfoWorks Model

The InfoWorks model, distributed by Innovyze from the U.K., has been used in DEP projects since 2001. The model engine is a FORTRAN program, linked with a front interface that contains both relational databases of the sewer network and GIS databases of the geographic attributes such as latitude, longitude, and ground elevations. Based on comparative evaluations performed in 2002-03 by the DEP and its consultants, this interface appeared to offer several advantages over other commercial models such as easy interfacing with GIS for graphical and input/output data analysis and faster computational times for annual simulations. The model utilizes an implicit finite difference-based numerical solution technique to provide more stable modeling of key elements of the sewer systems. The model incorporates full Saint-Venant's equations for continuity and momentum for hydraulic routing and, as such, is well suited for modeling of the backwater effects and reverse flow, open channels, sewers, detention ponds, complex pipe connections and complex ancillary structures such as culverts, orifices and weirs.

Similar to other urban drainage models, the InfoWorks model calculates runoff volumes first using the same algorithms used in the SWMM model and routes the runoff over sub-areas (subcatchments) to generate runoff hydrographs. The hydrographs are then applied to the channel-sewer system for hydraulic routing. Dry weather flows (DWF) are added at the respective manholes for routing towards the treatment plant. Figure 3-3 presents a schematic of the InfoWorks model linkage and outputs used to calculate the wet-weather and runoff percent captures.

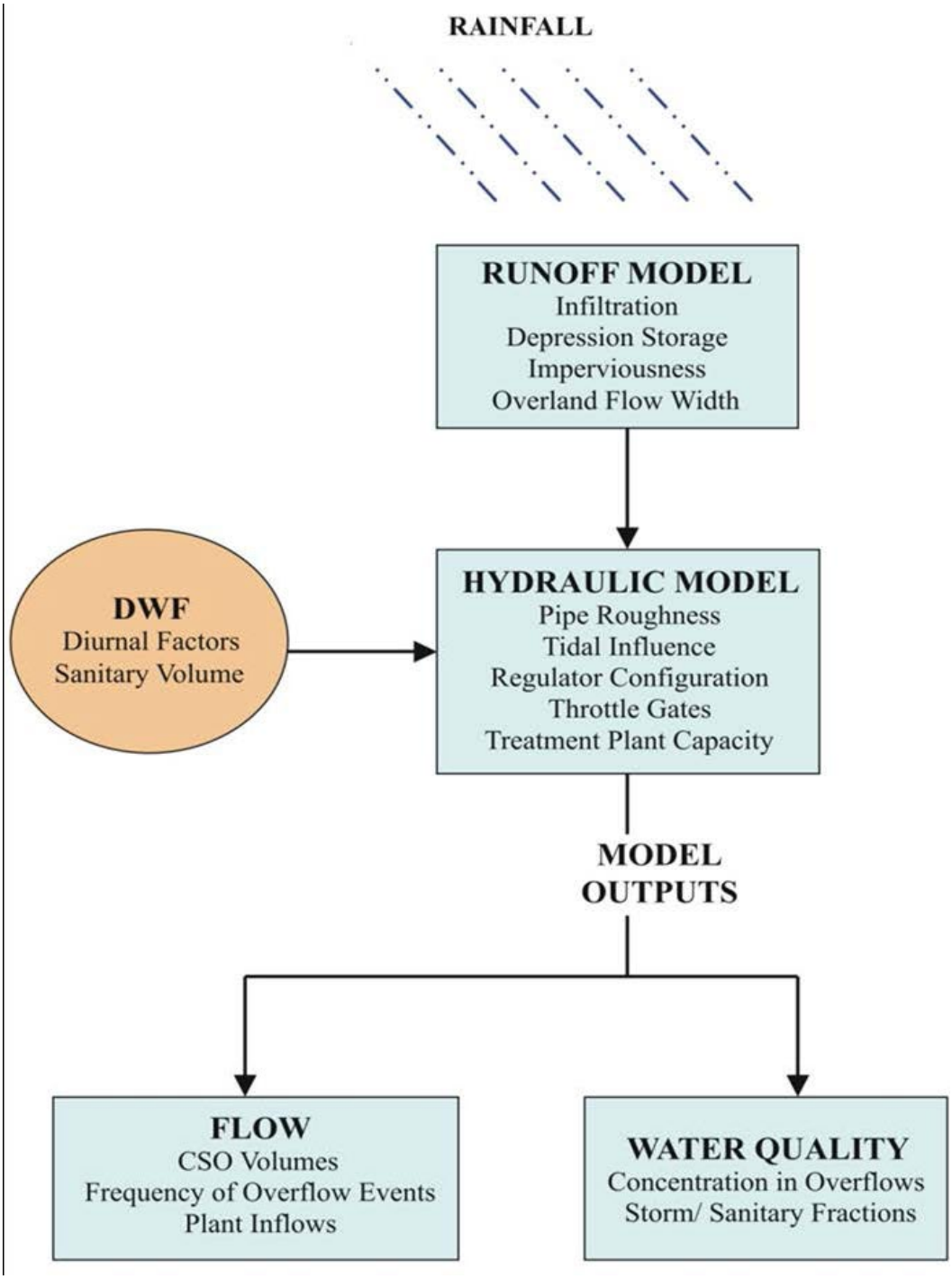


Figure 3-3. Schematic Representation of InfoWorks Model

The SWMM RUNOFF option has been chosen as the InfoWorks runoff simulation algorithm. Each WRRF drainage area was divided into component regulator drainage areas. All pipes larger than 48 inches were included in all WRRF models, and some pipes in the range of 12 to 42 inches in selected WRRF models that were expanded based on local hydraulic conditions. The pipe network was used to further divide the regulator drainage area into smaller sub-catchments that drain to individual manholes. Each sub-catchment was then divided into impervious and pervious areas, based on geographical features including rooftops,

driveways, roadways, lawns, parking lots, and parks/open spaces. An example representation of pipes, manholes and surface features is shown in Figure 3-4.

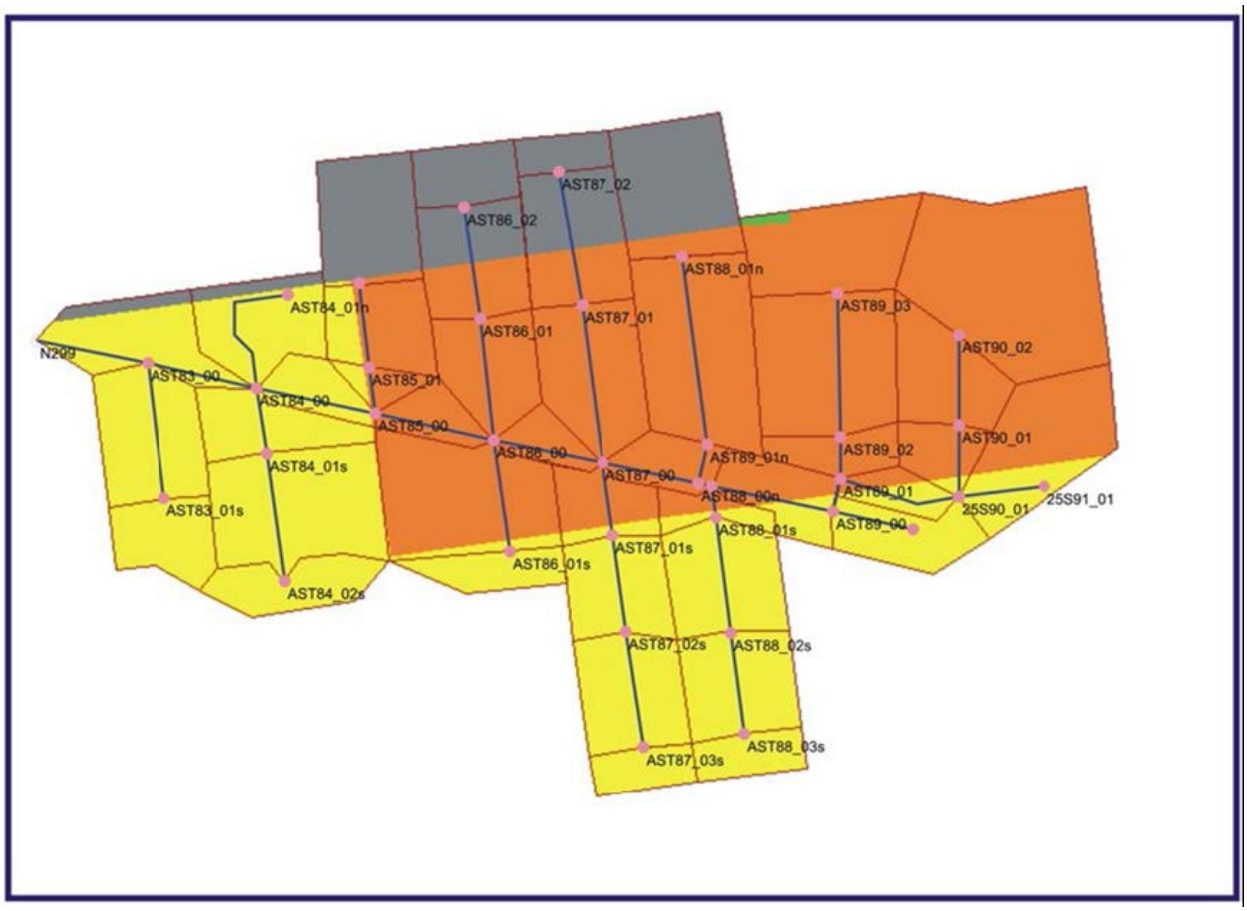


Figure 3-4. Geographical and Sewer System Data in InfoWorks Model

A major component of the 2011 InfoWorks model update was the satellite-imagery based imperviousness estimate. This process was well documented in the 2011 recalibration report submittal to the DEC. Although this estimate represents the total impervious area in each subcatchment, the flow monitoring performed by DEP confirmed that only a fraction of this area was contributing runoff directly to the sewer system. This fraction is referred to as the directly connected impervious area (DCIA) for each subcatchment, which is one of the calibration parameters. The DCIA, in essence, is equivalent to the runoff coefficient used in traditional sewer design principles with a standard rational approach. Hydrologic parameters included in the InfoWorks model for impervious surfaces are: DCIA, depression storage (initial losses), and surface roughness.

Similarly, the pervious areas were represented with the same three parameters – only difference being that the pervious areas were divided into open surfaces (parks, cemeteries or large open areas) and non-open surfaces (pervious areas in residential, commercial, industrial landuses). Soil compaction due to several

factors in these two distinct surfaces presents different runoff loss rates, which led to the explicit representation of open and non-open areas with different runoff coefficients in the InfoWorks models. Runoff is generated from each of these three surfaces within a subcatchment for a given rainfall intensity/volume. An example image and associated definition of pervious and impervious (complement of pervious areas) from the Newtown Creek WRRF drainage area is shown in Figure 3-5. The areas within red boundaries represent the catchment areas to two flow metering locations within this WRRF drainage area.

Figure 3-5. Landcover Definitions Using Remote Sensing Data

Monthly evaporation data was obtained from the Northeast Climate Center at Cornell University for all the four NOAA rain gage locations. This data was further processed based on the geographical proximity of WRRF service areas and used to develop the inputs for evaporation rates in the model.

The InfoWorks model uses the SWMM's non-linear reservoir model to route the runoff through urban landscapes to the sewer entry-point (catch basin/manhole included in the model). Sub-catchments are modeled as idealized rectangular areas with the slope of a sub-basin perpendicular to the width. The routing is performed according to the equation:

$$Q = \frac{1.486}{n} W (d - d_s)^{\frac{5}{3}} S^{\frac{1}{2}}$$

where:

Q is surface runoff (cfs);

W is width of sub-area (ft);

S is average slope of sub-area (ft/ft);

d is depth in the non-linear reservoir (ft);

d_s is the depression storage depth in the non-linear reservoir (ft); and

n is the Manning's roughness coefficients.

For hydraulic routing, the model uses the Saint-Venant equations to describe the conservation of mass and momentum:

$$\frac{\delta A}{\delta t} + \frac{\delta Q}{\delta x} = 0$$

$$\frac{\delta Q}{\delta t} + \frac{\delta}{\delta x}\left(\frac{Q^2}{A}\right) + gA\left(\cos\theta \frac{\delta g}{\delta x} - S_o + \frac{Q|Q|}{K^2}\right) = 0$$

with: Q Discharge (m^3/s)

A Cross-sectional area (m^2)

g Acceleration due to gravity (m/s^2)

2 Angle of bed to horizontal (°)

S_o Bed slope

K Conveyance

With the use of the Saint Venant equations, the following complex phenomena that occur in a sewer system can be dynamically characterized:

Presence of sewer sediments

- Pump-station operations (variable, step-wise, etc.), along with wet-well controls

- Inverted siphon
- Bifurcations
- Regulator operations during tidal conditions
- Throttling at treatment plants during wet weather to limit inflows
- Behavior of in-line regulators
- Street and basement flooding
- Groundwater infiltration into combined and separately sewers.

Depending on the complexity of each WRRF drainage area, some or all of the above processes were modeled in InfoWorks. Available CSO and in-system flow and depth monitoring data compiled during development of waterbody-watershed facility planning studies and CSO LTCPs was used to update the sewer system models of the 12 WRRF drainage areas with combined sewers and the Rockaway WRRF service area with separate sewers. The system-wide calibration involved the use of flow and depth data compiled at several in-system locations, selected outfalls, DEP SCADA locations, and at the influent of a WRRF. The City has been using a grid-based radar rainfall data framework to characterize the spatial-temporal variability. Selected storms ranging in intensity and total volumes observed during the calibration period were used to calibrate the appropriate hydrologic (e.g., runoff coefficient (DCIA), depression storage, and roughness) and hydraulic (pipe roughness, pump operations, weir coefficients and gate controls) model parameters. Additional wet weather events (storms) were used to independently validate the model performance. DEP used a weight-of-evidence approach to assess the adequacy of model calibration including correlation plots between observed and modeled runoff volumes, flow rates, and water depths in sewers; and also the temporal comparisons of flows during wet events at various calibration points including the plant influent. Figure 3-6 illustrates the detailed calibration/validation approach that involves assessing correlations at different spatial scales and also using a variety of flow/depth monitoring data.

The input parameters necessary for InfoWorks application to compute percent capture include: (a) maximum WRRF capacity that can be varied on a monthly basis – represented in the form of a wet well elevation versus pump capacity curve; (b) precipitation at hourly or shorter intervals; (c) dry weather flow at each regulator and its diurnal pattern that can be varied on a monthly basis; (d) distribution of land uses within each subcatchment along with losses such as evaporation and depression storage; (e) operation of throttling/sluice gates within a system; (f) tide conditions near the various outfalls within a system. Since the model accounts for surcharging and backups within sewers, such complex aspects as in-line storage are modeled accurately.

Tide data were developed from the three permanent tide gages maintained by NOAA near New York City – namely, King's Point, The Battery, and Sandy Hook. NOAA also publishes tidal correction factors in terms of differences in time and amplitude at several locations in the NY-NJ Harbor. The correction factors were tabulated for the locations of the waterbody near each or a set of outfalls, and then the data from the nearest NOAA station were used to develop the tidal boundary conditions for each or a set of outfalls within a drainage area.

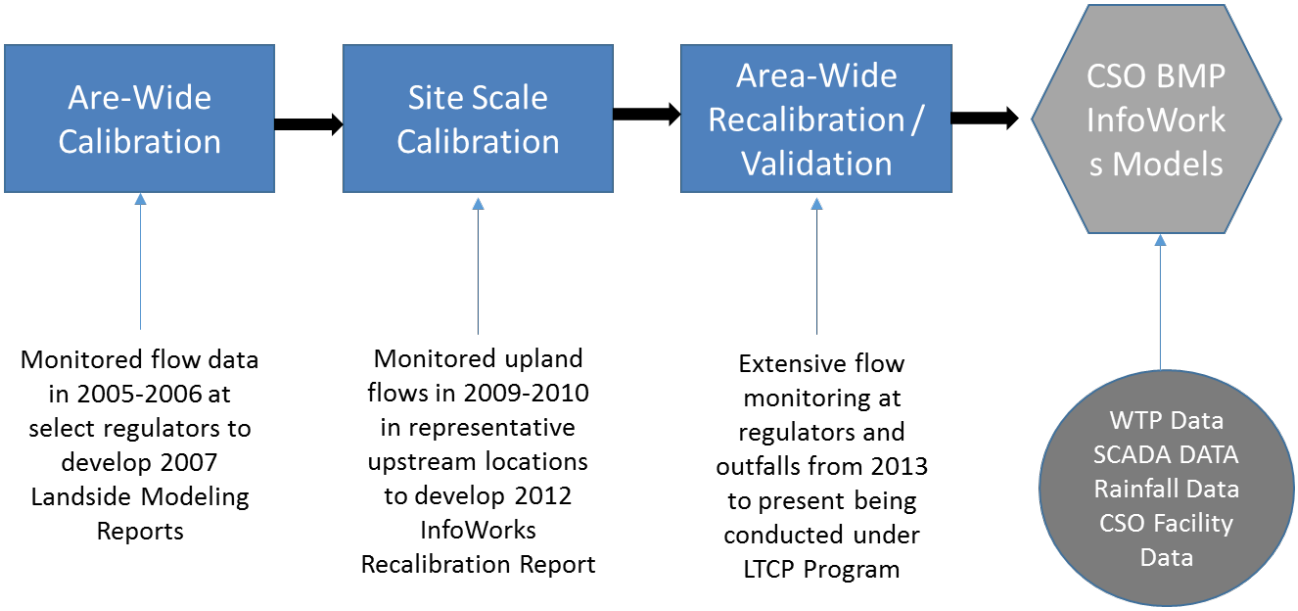


Figure 3-6. Comprehensive InfoWorks Model Calibration Approach

As a first step, the plant flow data at each WRRF was reviewed to develop the wet-well elevation versus pump discharge curves on a monthly basis. Appropriate dry weather flows and diurnal patterns were used for all regulators within the drainage area. The modeled and monitored plant flows were compared to confirm the adequacy of calibration of plant influent in the InfoWorks model for CY2019 conditions. If needed, the pump rating curves were adjusted to better match the monitored and modeled flows. Similarly, the rule curves associated with throttling gates, if appropriate, were modified to achieve better agreement between modeled and observed inflows at the plant. No other hydrologic or hydraulic model parameters were adjusted in the drainage area during this model application process. Specific hydraulic adjustments of the models have been made in select WRRF models to account for changes to the conveyance system, such as the operation of the Alley Creek, Flushing Creek, Paerdegat Basin and Spring Creek CSO retention facilities. The modeled inputs used in the InfoWorks model for all drainage areas with combined sewers are summarized in Table 3-2. Figure 3-7 shows an example correlation between measured and modeled inflows to the Bowery Bay WRRF, for CY2019.

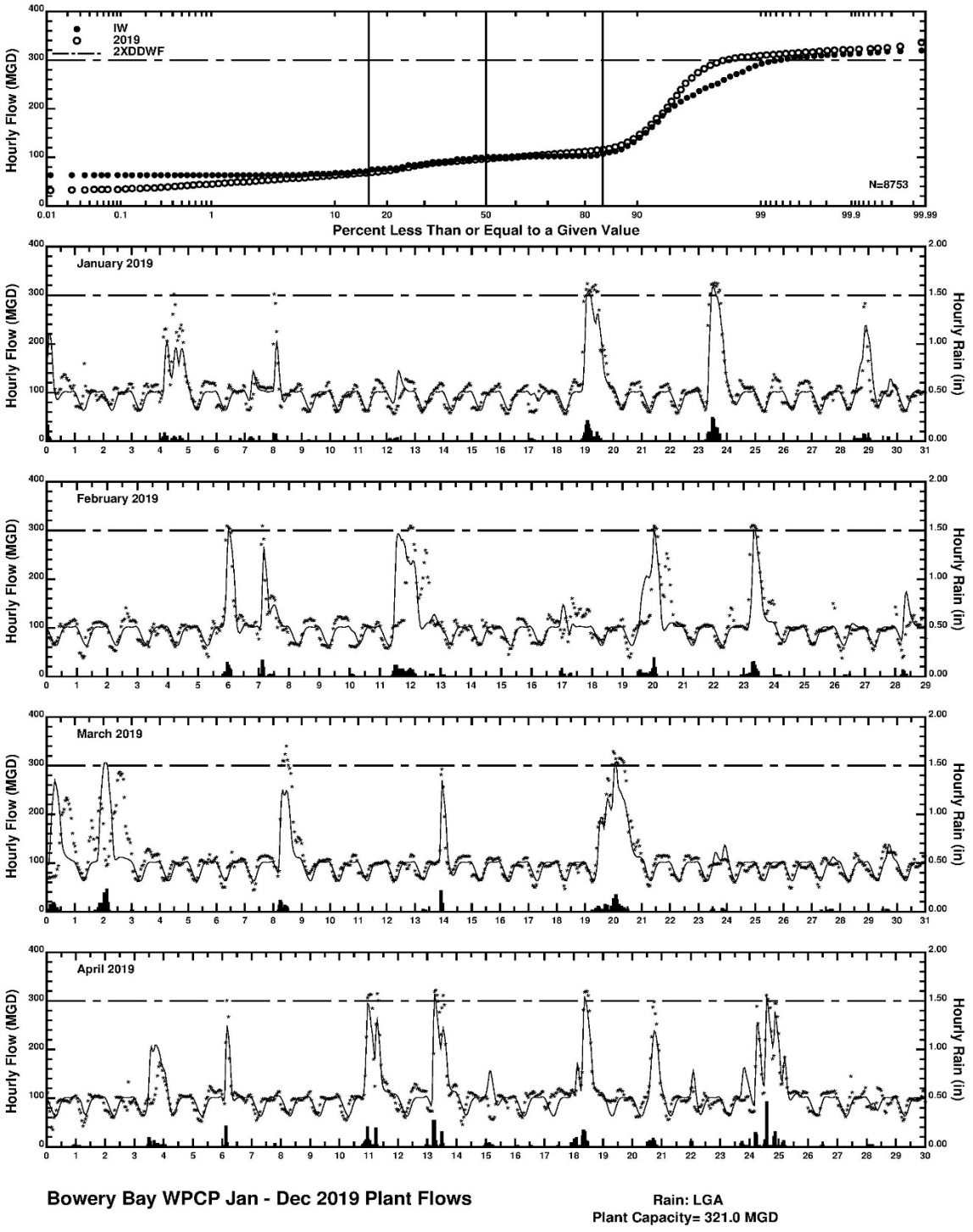


Figure 3-7. InfoWorks Sample Results 2019

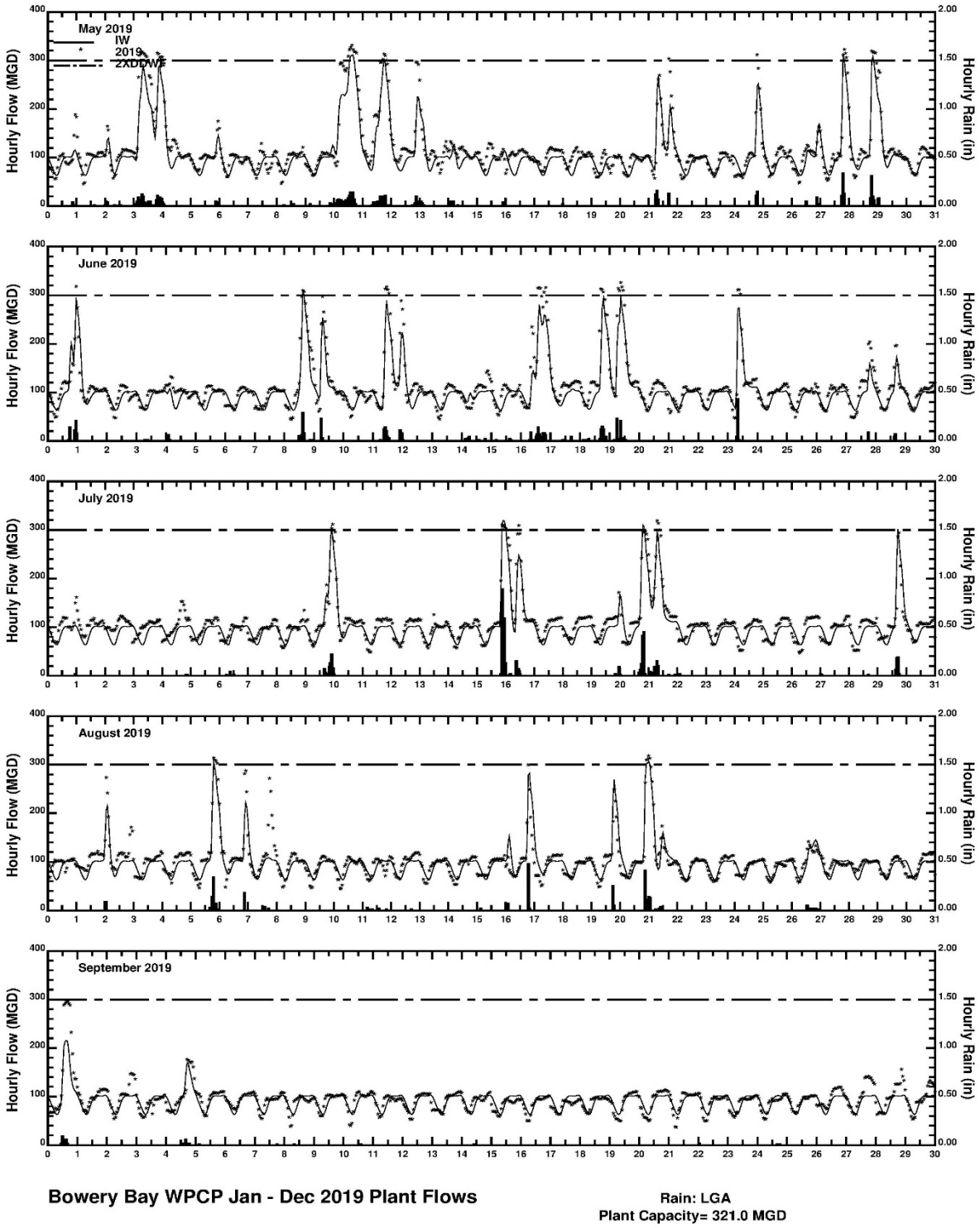


Figure 3-7. InfoWorks Sample Results 2019

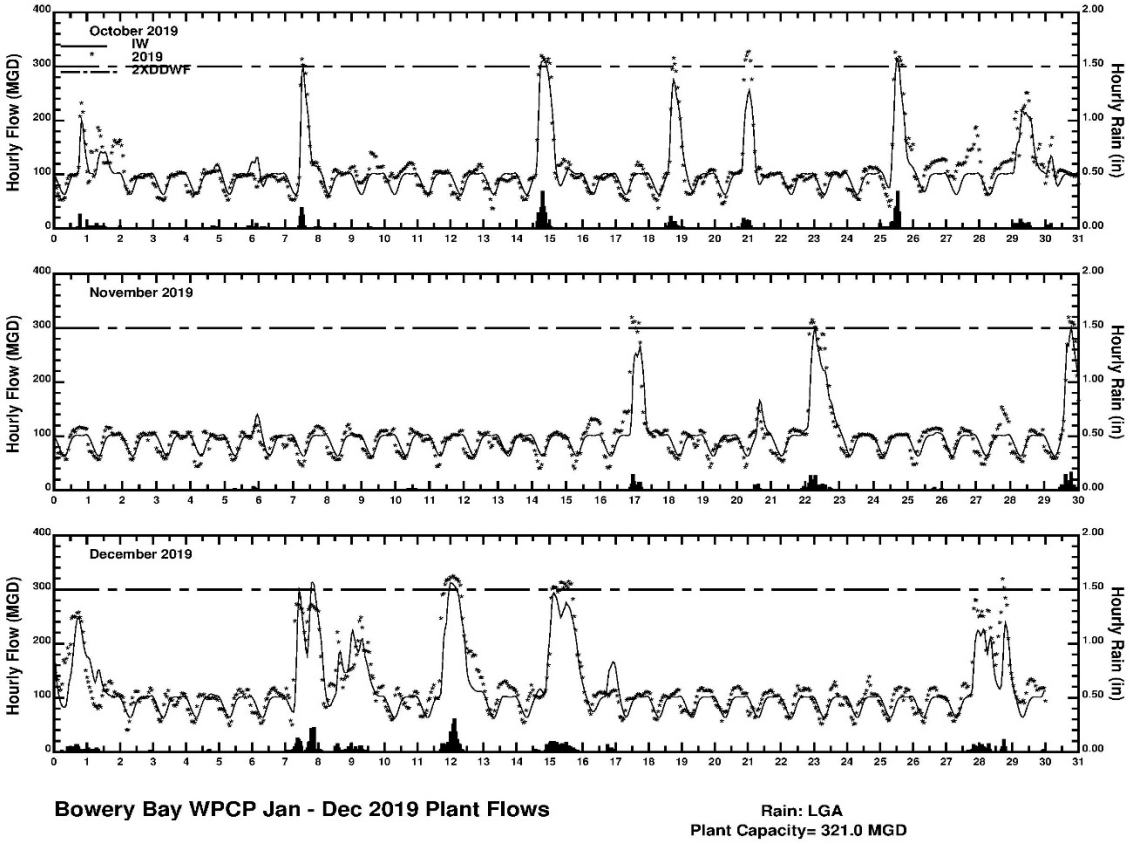


Figure 3-7. InfoWorks Sample Results 2019

Appendix 3.4: COMBINED-SEWAGE CAPTURE RESULTS - 2019 FLOW VOLUME

Table 3-2 presents the results of the combined-sewage volume percent capture evaluation performed for CY2019. The InfoWorks models were used to analyze drainage areas for the two scenarios, as discussed in Section 3.2 - "Actual" refers to the actual conveyance/treatment system performance and rainfall in 2019.

As shown in Table 3-3, the "Actual" scenario capture of combined-sewage volume in 2019 averaged 87 percent citywide. Combined-sewage capture at individual, combined area WRRFs varied from a low at Owls Head (74 percent each) to a high at North River (98 percent each). Combined-sewage flow capture is not applicable at the separately sewered WRRFs (Oakwood Beach and Rockaway).

Table 3-2. As-Modeled WRRF Service Area Characteristics – CY 2019

WRRF	Total Drainage Area (acres)	Combined Sewage Drainage Area (acres)	Average Dry Weather Flow (MGD)	Design Dry Weather Flow (MGD)	Maximum Wet Weather Flow[1] (MGD)	Permitted Wet Weather Flow[2] (MGD)
26W	5,787	4,358	41.6	85	136	170
BB	14,232	12,446	89.4	150	321	300
CI	6,779	6,070	95.0	110	230	220
HP	22,543	11,546	115.9	200	406	400
JA	26,421	5,451	78.9	100	199	200
NC	15,103	13,562	194.6	350	789	700
NR	5,572	4,448	102.3	170	347	340
OH	10,078	9,448	81.6	120	244	240
PR	11,541	3,575	26.2	60	124	120
RH	3,738	2,991	26.2	60	126	120
TI	18,314	8,721	58.5	80	164	160
WI	15,799	12,822	181.6	275	571	550
NYC CS Total	155,907	95,438	1,090.9	1,760	3,657	

Separate Areas						
RO	5,710	NA	20.8	45	47	90
OB[3]	10,779	NA	30.7	40	100	80
NYC overall	172,396	95,438	1,142.4	1,845	3,804	

- The maximum 99.9th percentile wet weather flows were used to set the peak pumping capacity to be used in the InfoWorks model.
- Permitted flow is max design flow, or twice design dry-weather flow (2xDDWF), except as noted.
- Certain statistics excluded for RO and OB because these areas are separately sewered.

Table 3-3. Combined-Sewage Capture Results – Flow Volume Calendar Year 2019

WRRF	Actual [1] (2019)
26W	96%
BB	79%
CI	96%
HP	84%
JA	88%
NC	93%
NR	98%
OH	74%
PR	80%
RH	92%
TI	83%
WI	89%
NYC Avg. [2]	87%

Notes:

- The "actual" case capture results reflect the —state and operation of the collection/treatment system during the subject period, as well as the actual rainfall patterns during the subject period.
- Averages are combined sewage drainage-area weighted, and exclude separately (Oakwood Beach and Rockaway).

Appendix 3.5: REFERENCES

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https://www.nssl.noaa.gov/projects/mrms/

Appendix 4:

- Appendix 4.1: Table 1 - Wet Weather Operating Plan (WWOP) Submittal Schedule - WRRF's
- Appendix 4.2: Table 2 - Wet Weather Operating Plan (WWOP) Submittal Schedule - CSO Facilities

Appendix 4.1: TABLE 1 - WET WEATHER OPERATING PLAN (WWOP) SUBMITTAL SCHEDULE - WRRF'S

	Submittal Dates		
Facilities	**Original**	**Revisions**	**Status**
Wards Island	Jul-03	Sept. 2004, April 2007, Aug. 2007, June 2008 (submitted Sept. 2008), Dec. 2008, June 2009, Jan. 2011, Oct. 2014, Dec. 2014	Jun 2009 version Approved (Mar. 2010) Awaiting DEC approval of the Dec. 2014 version
North River	Apr-04	July 2011, Dec. 2014	April 2004 version Approved (Jan. 2006) July 2011 submittal was an amendment to WWOP due to fire Awaiting DEC approval of the Dec. 2014 version
Hunts Point	Jul-03	Sept. 2004, April 2010, Aug. 2010, Dec. 2014	Aug. 2010 version Approved (Oct. 2010) Awaiting DEC approval of the Dec. 2014 version
26th Ward	Jul-03	Sept. 2004, May 2007, Oct. 2007, Feb. 2009, Aug. 2009, July 2010, Dec. 2014, Oct. 2015, Mar. 2016	Mar. 2016 version Approved (Mar. 2016)
Coney Island	Apr-05	Dec. 2007, May 2010, Oct. 2010, Dec. 2014	Dec. 2007 version Approved (Mar. 2008) Awaiting DEC approval of the Dec. 2014 version
Owls Head	Apr-05	Dec. 2007, Sept. 2008, Dec. 2008, Dec. 2014	Dec. 2008 version Approved (Jan. 2009) Awaiting DEC approval of the Dec. 2014 version
Newtown Creek	Jun-03	April 2005, March 2009, April 2010, Oct. 2011, April 2013, Dec. 2014	April 2013 version Approved (Jun. 2013) Awaiting DEC approval of the Dec. 2014 version
Red Hook	Feb. 2005	Dec. 2014	WWOP Approved (Jan. 2006) Awaiting DEC approval of the Dec. 2014 version
Jamaica	Apr-05	April 2007, June 2007, Dec. 2014	June 2007 version Approved (Sept. 2007) Awaiting DEC approval of the Dec. 2014 version
Tallman Island	Jul-03	Sept. 2004, May 2007, Oct. 2007, Aug. 2009, April 2010, July 2010, July 2011, Dec. 2014	July 2010 version Approved (Sept. 2010) Awaiting DEC approval of the Dec. 2014 version
Bowery Bay	Jul-03	Sept. 2004, March 2009, Dec. 2014, Mar. 2016	March 2009 version Conditionally Approved (May 2009)

			Awaiting DEC approval of the Mar. 2016 version
Rockaway	Apr-05	Dec. 2007, Dec. 2014	Dec. 2007 version Approved (Mar. 2008) Awaiting DEC approval of the Dec. 2014 version
Oakwood Beach	Apr-05	Dec. 2007, Dec. 2014	Dec. 2007 version Approved (Mar. 2008) Awaiting DEC approval of the Dec. 2014 version
Port Richmond	Apr-05	Dec. 2007, Dec. 2014	Dec. 2007 version Approved (Mar. 2008) Awaiting DEC approval of the Dec. 2014 version

Appendix 4.2: TABLE 2 - WET WEATHER OPERATING PLAN (WWOP) SUBMITTAL SCHEDULE - CSO FACILITIES

	Submittal Dates		
Facilities	**Original**	**Revisions**	**Status**
Spring Creek	Jun-03	May 2007, Oct. 2007, Feb. 2009, Aug. 2009, July 2010, Dec 2014, Oct. 2015, Mar. 2016	appended to 26W WWOP
Flushing Bay	Dec. 2003	May 2007, Oct. 2007, Aug. 2009, April 2010, July 2010, July 2011, Dec-14	appended to TI WWOP
Alley Creek	Dec. 2003	May 2007, Oct. 2007, Aug. 2009, April 2010, July 2010, July 2011, Dec-14	appended to TI WWOP
Peardegat Basin	Dec. 2003	May 2010, Oct. 2010, Dec 2014	appended to CI WWOP
Corona Avenue	Dec. 2003	March 2009, Dec 2014, Mar. 2016	appended to BB WWOP

Appendix 5:

Figure 1: Dry Weather Raw Sewage Bypass Graph (CY2016 – 2020)

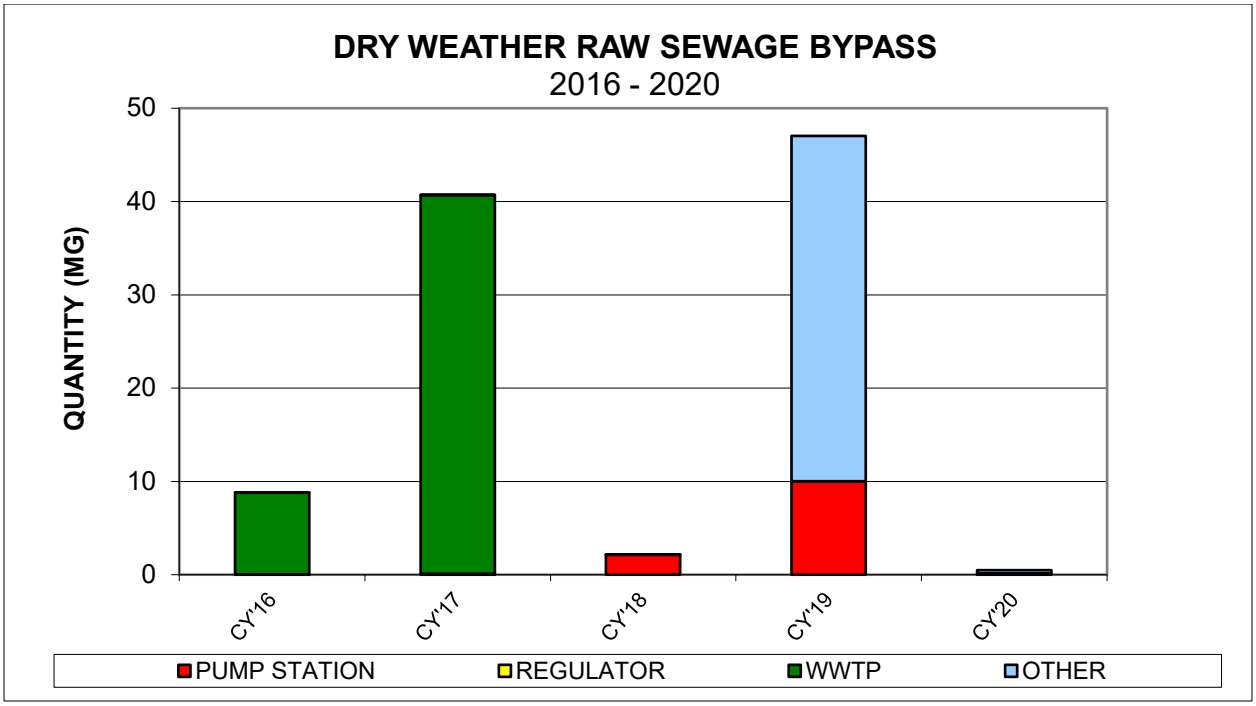


Table 1: Dry Weather Bypassing CY'16-CY'20

SOURCE	CY'16	CY'17	CY'18	CY'19	CY'20
PUMP STATION	0.02	0.02	2.13	10.00	0.05
REGULATOR	0.01	0.09	0.01	0.01	0.08
WWTP	8.76	40.60	n/a	0.00	0.00
OTHER	0.01	0.02	0.01	37.01	0.35
TOTAL	8.80	40.72	2.16	47.01	0.49

Other locations include: bypasses from outfalls, street locations, etc.
*In 2016, there were Bypasses during Wet Weather at Newtown Creek, Tallman Island and Bowery Bay which are included in the above totals.
*In 2016, there were bypasses that occurred from private sewers which overflowed to DEP-owned catch basins/ outfalls which are included in the above totals. Some of these events had unknown amounts and end times; these are included in the # of events but the amount and duration are unknown.
*In 2017, there were Bypasses during Wet Weather at Hunts Point and Bowery Bay which are included in the above totals.
*In 2019, there was a Potential Raw Sewage Bypass at Jamaica, but it was not confirmed.

Table 2: Dry Weather Raw Sewage Bypasses CY-2020 - Pump Station

Years	# Of Events	Total Bypass (MG)	Duration (Hrs)
CY2016	2	0.0221	0.67
CY2017	2	0.0153	6.50
CY2018	2	2.1320	13.33
CY2019	4	10.00	67.23
CY2020	3	0.05	5.50

Table 3: Dry Weather Raw Sewage Bypasses CY-2020 – Regulator

Years	# Of Events	Total Bypass (MG)	Duration (Hrs)
CY2016	3	0.0072	4.50
CY2017	2	0.0861	9.08
CY2018	3	0.0127	3.83
CY2019	3	0.0092	5.92
CY2020	4	0.08	9.05

Table 4: Dry Weather Raw Sewage Bypasses CY-2020 – WWTP

Years	# Of Events	Total Bypass (MG)	Duration (Hrs)
CY2016	4	8.76	16.6
CY2017	2	40.60	19.3
CY2018	0	n/a	n/a
CY2019	1	n/a	1.4
CY2020	0	n/a	n/a

Table 5: Dry Weather Raw Sewage Bypasses CY-2020 - Other Location

Years	# Of Events	Total Bypass (MG)	Duration (Hrs)
CY2016	5	0.0063	23.58
CY2017	7	0.0186	39.48
CY2018	0	n/a	n/a
CY2019	6	37.01	395.47
CY2020	4	0.35	59.25

Table 6: Pump Station Bypassing Summary CY2020 by Location

Location	Events	% Events	MG	% MG	Hours	% Hours
TI-154th Street Pumping Station	1	33%	0.0038	7%	3.00	55%
Hannah Street Pumping Station	1	33%	0.050	93%	1.75	32%
Canterbury Avenue Pump Station	1	33%	0.000225	0.42%	0.75	14%
TOTAL	3	100%	0.054	100%	5.50	100%

Table 7: Pump Station Bypassing Summary CY2020 by Cause Code

Cause Code	Code Description	Events	% Events	MG	% MG	Hours	% Hours
2A	Electrical Utility Failure: Feeder	1	33%	0.0038	7%	3.00	55%
3E	Electricity Equipment Failure: Other	1	33%	0.050	93%	1.75	32%
2A	Electrical Utility Failure: Feeder	1	33%	0.000225	0%	0.75	14%
Total		3	100%	0.054	100%	5.50	100%

Table 8: Regulator Bypassing Summary CY2020 by Location

Location	Events	% Events	MG	% MG	Hours	% Hours
TI-Reg. No. 57	2	50%	0.0728	87%	6.57	73%
NC-Reg. NCB-05A	2	50%	0.01074	13%	2.48	27%
TOTAL	4	100%	0.0835	100%	9.05	100%

Table 9: Regulator Bypassing Summary CY2020 by Cause Code

Cause Code	Code Description	Events	% Events	MG	% MG	Hours	% Hours
6A	Blockages: Regulator	3	75%	0.0151	18%	5.05	56%
6C	Blockages: Branch Interceptor	1	25%	0.0684	82%	4.00	44%
Total		4	100%	0.0835	100%	9.05	100%

Table 10: WWTP Bypass Summary CY2020 by Location – N/A

Appendix 6:

- Appendix 6.1: Exhibit 1 – Letter to Industrial Users Amending
- Appendix 6.2: Exhibit 2 – Trends in Metals Loadings to New York City WRRFs

Appendix 6.1: EXHIBIT 1 – LETTER TO INDUSTRIAL USERS AMENDING

The City of New York
Department of Environmental Protection
59-17 Junction Boulevard
Flushing, New York
11373-5108

Christopher O. Ward
Commissioner

Alfonso R. Lopez, P.E.
Deputy Commissioner
Bureau of Wastewater Treatment
Tel (718) 595-5050
(Fax (718) 595-6950
Alopez@dep.nyc.gov

September 1, 2004

Re: Industrial Wastewater Discharge Permit/Commissioner's Order and Directive Amendments

Certified Mail/Return Receipt Requested

Dear Industrial User:

This is to notify you that the New York City Department of Environmental Protection (DEP) is hereby amending the requirements of your Industrial Wastewater Discharge Permit/Commissioner's Order and Directive (Permit/Directive) as follows:

1. Your establishment is now required to hold its process wastewater and non-contact cooling water to the maximum extent practicable during heavy wet weather events.

The reason for this is that in New York City, combined sewers carry both wastewater and storm water to the City's Water Pollution Control Plants (WPCP). Combined Sewer Overflows (CSOs) can occur during heavy wet weather events, causing wastewater and storm water to be discharged to the receiving waters, without treatment at a WPCP, due to the inability of the WPCP to accept the increased flow. This has an adverse affect on New York City's waterways. DEP has made significant reductions in the size and frequency of CSO events within the City; however, this problem can still occur during heavy rainfall.

2. Part II, Section A of your Permit/Directive is hereby amended, raising the maximum civil and misdemeanor penalties from $1,000.00 to $10,000.00, as per an amendment to the New York City Administrative Code.

3. Part II, Section C (2) (e) is amended to require inclusion of the dates of analysis for each sample and the laboratory's sample identification for each sample in the laboratory report. Please see the amended Industrial User Self Monitoring Report Form and the Sample Laboratory Report Form enclosed for all information establishment is required to submit.

All other requirements of your Permit/Directive remain in effect.

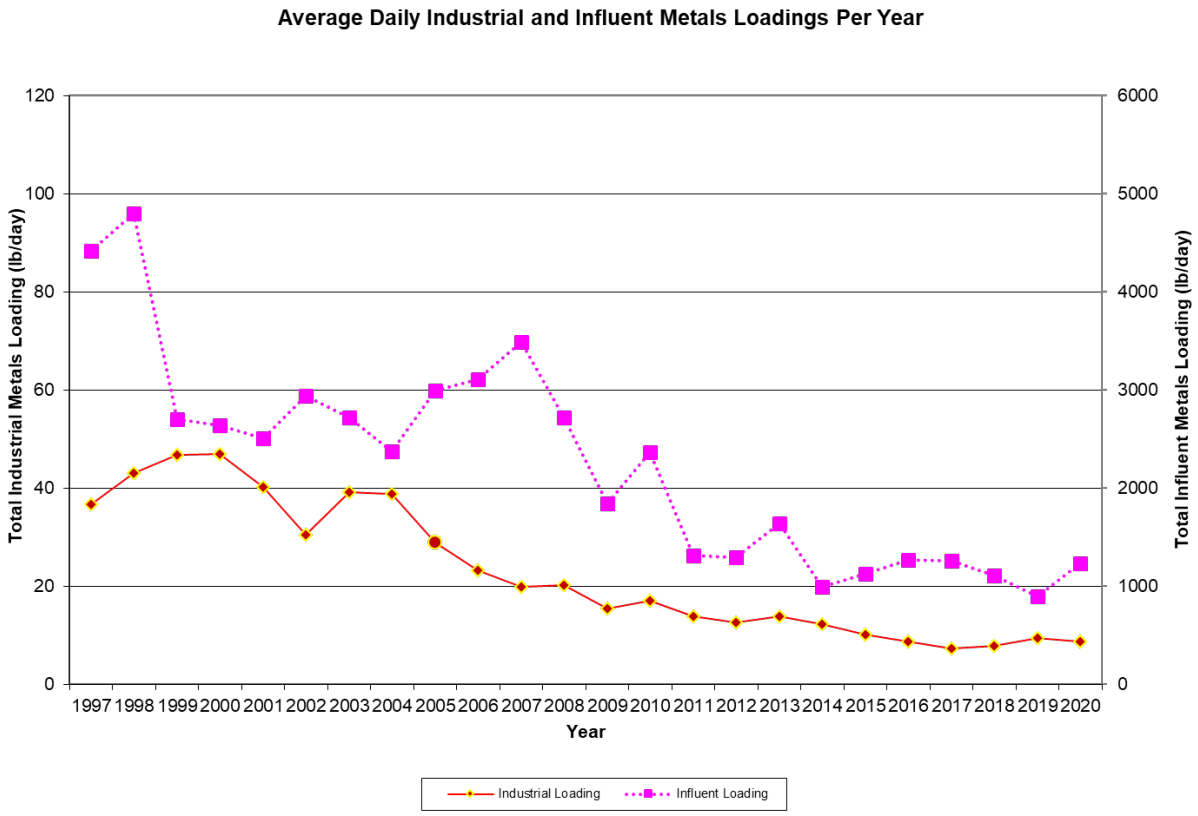
If you have any questions regarding this matter, please telephone Ms. Frances Leung at (718) 595-4763.

Sincerely,

Leslie Lipton, Esq., Chief
Division of Pollution Control and Monitoring

Enc. Industrial User Self Monitoring Report Form
Sample Laboratory Report Form

Appendix 6.2: EXHIBIT 2 – TRENDS IN METALS LOADINGS TO NEW YORK CITY WRRFS



Appendix 7.1: BWSO

- Appendix 7.1.1: Table 7.1-A - CY2020 Catch Basin Survey & Cleaning
- Appendix 7.1.2: Table 7.1-B CY2020 Catch Basin Hooding

Appendix 7.2: BWT
:

- Appendix 7.2.1: Table 7.2-A - City-Wide Floatable Material Recovery
- Appendix 7.2.2: Table 7.2-B - City-Wide Floatable Material Recovery per CSO Site
- Appendix 7.2.3: Table 7.2-C - City-Wide Floatable Material Recovery per Containment Sites
- Appendix 7.2.4: Table 7.3-D - NYC DEP CSO Floatables Removal Program via Skimmer Vessels
- Appendix 7.2.5: Figure 7.2-A - Floatables Booming, Netting, and Offloading Sites
- Appendix 7.2.6: Figure 7.2-B - City-Wide Floatables Material Recovery 2004-2018
- Appendix 7.2.7: Figure 7.2-C - NYC DSNY Scorecard 2017

Appendix 6.3: BWSO

Appendix 7.1.1: Table 7.1-A - CY2020 Catch Basin Survey & Cleaning

Borough	Total CB Inspections	Scheduled CB Cleanings	Complaint Based CB Cleaned	Total CB Cleaned
Bronx	7,899	3,228	285	3,513
Brooklyn	12,051	4,795	1,322	6,117
Manhattan	5,995	3,134	583	3,717
Queens	23,621	14,170	2,467	16,637
Staten Island	9,923	3,430	364	3,794
Total	**59,489**	**28,757**	**5,021**	**33,778**

Appendix 7.1.2: Table 7.1-B - CY2020 Catch Basin Hooding

Wastewater Resource Recovery Facility (WRRF) Drainage Area	Quantity
26th Ward	49
Bowery Bay	60
Coney Island	150
Hunts Point	19
Jamaica	723
Newtown Creek	126
North River	166

Oakwood Beach	230
Owls Head	140
Port Richmond	115
Red Hook	31
Rockaway	116
Tallman Island	98
Wards Island	101
Total	**2,124**

Appendix 7.2: BWT

Appendix 7.2.1: Table 7.2-A - City-Wide Floatable Material Recovery 2004-2020

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
No. Sites[1]																	
FCP[2] Permanent	21.00	21.00	22.00	21.00	21.00	24.00	23.00	23.00	23.00	23.00	23.00	22.00	22.00	22.00	22.00	22.00	22.00
FCP Temporary[3]	2.00	2.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Other Sites	2.00	2.00	3.00	4.00	4.00	3.00	12.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	25.00	25.00	26.00	27.00	27.00	29.00	36.00	24.00	24.00	24.00	24.00	23.00	23.00	23.00	23.00	23.00	23.00
Volume [cy][4]																	
FCP Permanent	1,460.00	1,047.50	1,614.50	2,131.30	1,881.75	1,368.75	1774.50	1,988.25	1,384.00	921.00	437.75	246.5	454.625	579.625	513.00	349.50	444.75
FCP Temporary	2.00	3.00	18.00	25.50	18.25	1.00	5.00	1.50	9.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Sites	32.00	80.25	70.50	151.50	136.50	207.50	523.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	**1,494.00**	**1,130.75**	**1,703.00**	**2,308.30**	**2,036.50**	**1,577.25**	**2,302.50**	**1,989.75**	**1,393.00**	**927.00**	**437.75**	**246.50**	**454.625**	**579.625**	**513.00**	**349.50**	**444.75**

[1] Maximum number of sites operating during calendar year period.
[2] Floatables Containment Program.
[3] "Temporary" status refers to sites which do not have a permanent floatables containment installation - Gowanus Canal.
[4] Total volume of floatables retrieved from sites during period

Appendix 7.2.2: Table 7.2-B - City-Wide Floatable Material Recovery Per CSO Floatable Containment Sites, 2020

Month-Year	FRESH CREEK	BERGEN BASIN	THURSTON BASIN	FLUSHING BAY I	FLUSHING BAY II	FLUSHING CREEK I	FLUSHING CREEK II	BRONX RIVER	CRYDERS POINT	HENDRIX CREEK	ENGLISH KILLS	CONEY ISLAND	GOWANUS CANAL
Jan-20	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	48	0	0	0	0	0
Mar-20	6	24	0	0	0	0	1	25	2	0	0	0	0
Apr-20	2	0	0	0	0	0	0	36	0	0	0	0	0
May-20	6	0	3	0	0	0	0	75	0	0	0	0	0
Jun-20	0	9	0	0	0	0	2	34	1	0	1	0	0
Jul-20	0	0	0	0	0	0	0	27	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	12	0	0	0	0	0
Sep-20	1	0	0	0	0	0	1.5	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	36	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	18	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	48	0	0	0	0	0
2020 Total	**15**	**33**	**3**	**0**	**0**	**0**	**4.5**	**359**	**3**	**0**	**1**	**0**	**0**

Month-Year	MASPETH CREEK	BOWERY BAY	BUSHWICK INLET	EAST BRANCH	HUNTS POINT		OWLS HEAD	WALLABOUT 1	WALLABOUT 2	WESTCHESTER CREEK	CLASON POINT	OUTSIDE CONTAINMENT (1)	2020 Total
Jan-20	0	0	0	0	0		0	0	0	0	0	0	**0**
Feb-20	0	0	0	0	0		0	0	0	0	0	0	**48**
Mar-20	0	0	0	0	0		0	0	0	0	0	0	**58**
Apr-20	0	0	0	0	0		0	0	0	0	0	0	**38**
May-20	0	0	0	0	0		0	0	0	0	0	6	**90**
Jun-20	0.5	0	0	0.25	0		0	0	0	0	0	0	**47.75**
Jul-20	0	0	0	0	0		0	0	0	0	0	7	**34**
Aug-20	0	0	0	0	0		0	0	0	0	0	0.5	**12.5**
Sep-20	0	0	0	0	0		0	0	0	0	0	6	**8.5**
Oct-20	0	0	0	0	0		0	0	0	0	0	6	**42**
Nov-20	0	0	0	0	0		0	0	0	0	0	0	**18**
Dec-20	0	0	0	0	0		0	0	0	0	0	0	**48**
2020 Total	**0.5**	**0**	**0**	**0.25**	**0**		**0**	**0**	**0**	**0**	**0**	**25.5**	**444.75**

Appendix 7.2.3: Table 7.2-C - City-Wide Floatable Material Recovery While Navigating to Containment Sites, 2020

Month-Year	BRONX RIVER	WHALE CREEK	NEWTOWN CREEK	SHEEPSHEAD BAY	2020 Total
Jan-20	0	0	0	0	**0**
Feb-20	0	0	0	0	**0**
Mar-20	0	0	0	0	0
Apr-20	0	0	0	0	0
May-20	0	0	0	6	6
Jun-20	0	0	0	0	0
Jul-20	2	2	3	0	7
Aug-20	0	0.5	0	0	0.5
Sep-20	3	1.5	1.5	0	6
Oct-20	1	0	5	0	6
Nov-20	0	0	0	0	0
Dec-20	0	0	0	0	0
2020 Total	**6**	**4**	**9.5**	**6**	25.5

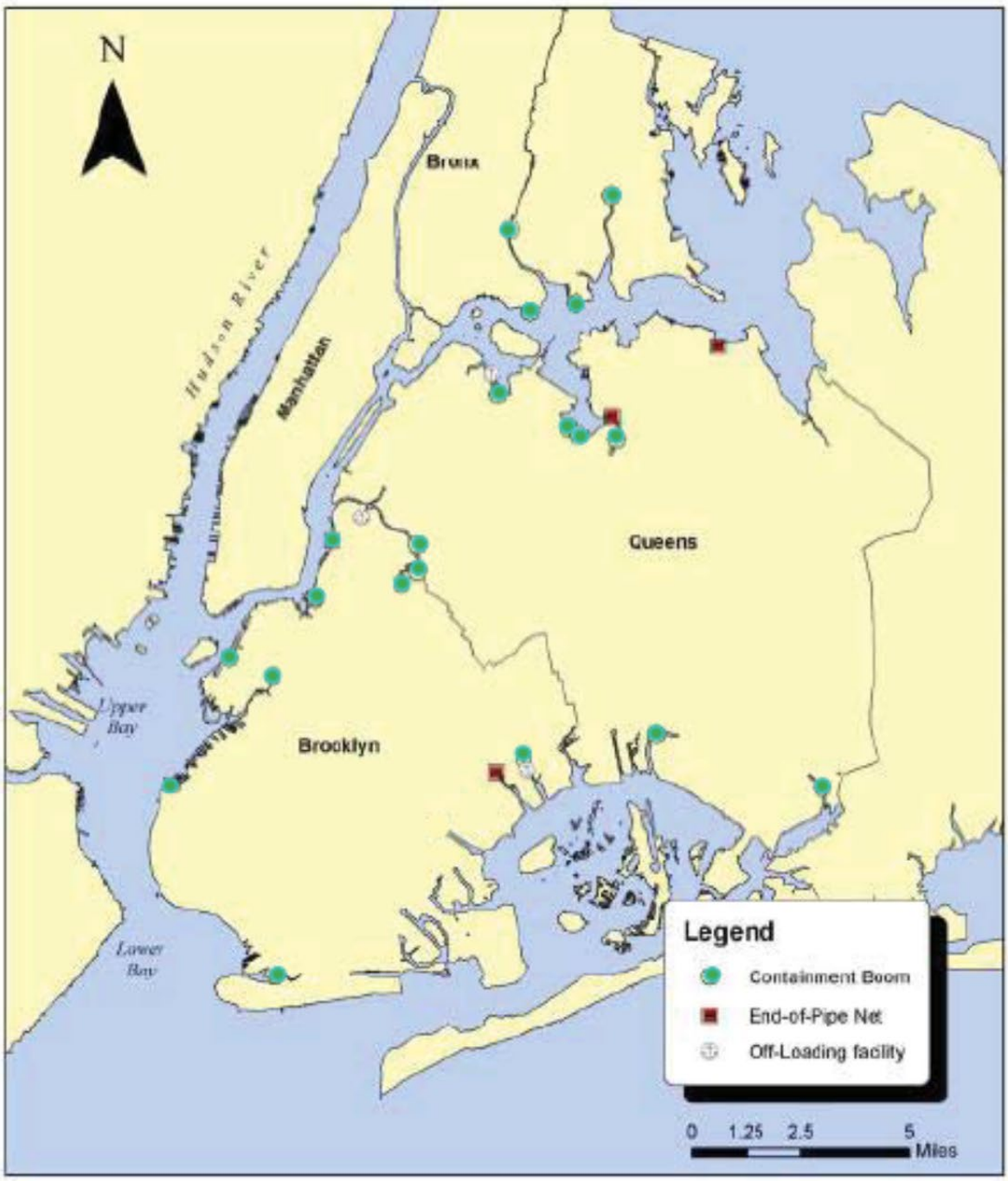
Appendix 7.2.4: Table 7.3-D - NYCDEP CSO Floatables Removal Program via Skimmer Vessels Collection Summary

MONTH	ZONE I	ZONE II/III	ZONE IV	TOTAL
January	0	0	0	0
February	0	0	48	48
March	30	0	28	58
April	2	0	36	38
May	15	0	75	90
June	9	1.75	37	47.75
July	0	5	29	34
August	0	0.5	12	12.5
September	1	3	4.5	8.5
October	0	5	37	42
November	0	0	18	18
December	0	0	48	48
2020 TOTAL YTD	**57**	**15.25**	**372.5**	**444.75**

ZONE I	ZONE II/III	ZONE IV
	CONEY ISLAND	BOWERY BAY
FRESH CREEK	OWLS HEAD	FLUSHING BAY I
HENDRIX CREEK	GOWANUS CANAL	FLUSHING BAY II
BERGEN BASIN	WALLABOUT I	FLUSHING CREEK I
THURSTON BASIN	WALLABOUT II	FLUSHING CREEK II
GRAVESEND BAY	BUSHWICK INLET	WESTCHESTER CREEK
SHEEPSHEAD BAY	UPPER NY BAY	CLASON POINT
JAMAICA BAY	MASPETH CREEK	BRONX RIVER
	EAST BRANCH	HUNTS POINT
	ENGLISH KILLS	CRYDERS LANE
	WHALE CREEK	EAST RIVER
	NEWTOWN CREEK	BOWERY BAY

Red - Open Water
Blue - Temporary site
Black - CSO floatable containment

Appendix 7.2.5: Figure 7.2-A - Floatables Booming, Netting, and Offloading Sites

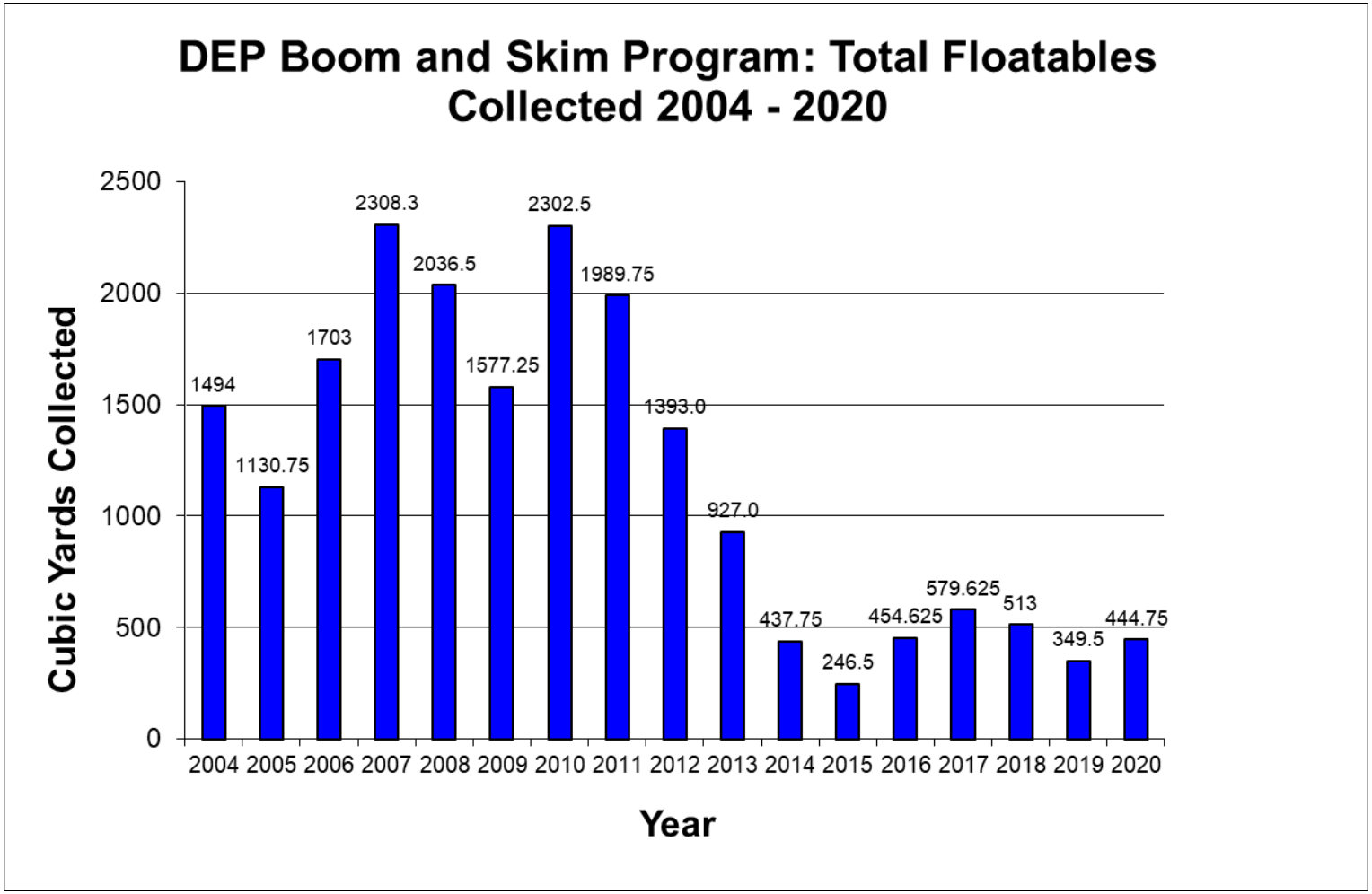


1200 MacArthur Boulevard
Mahwah, New Jersey 07430

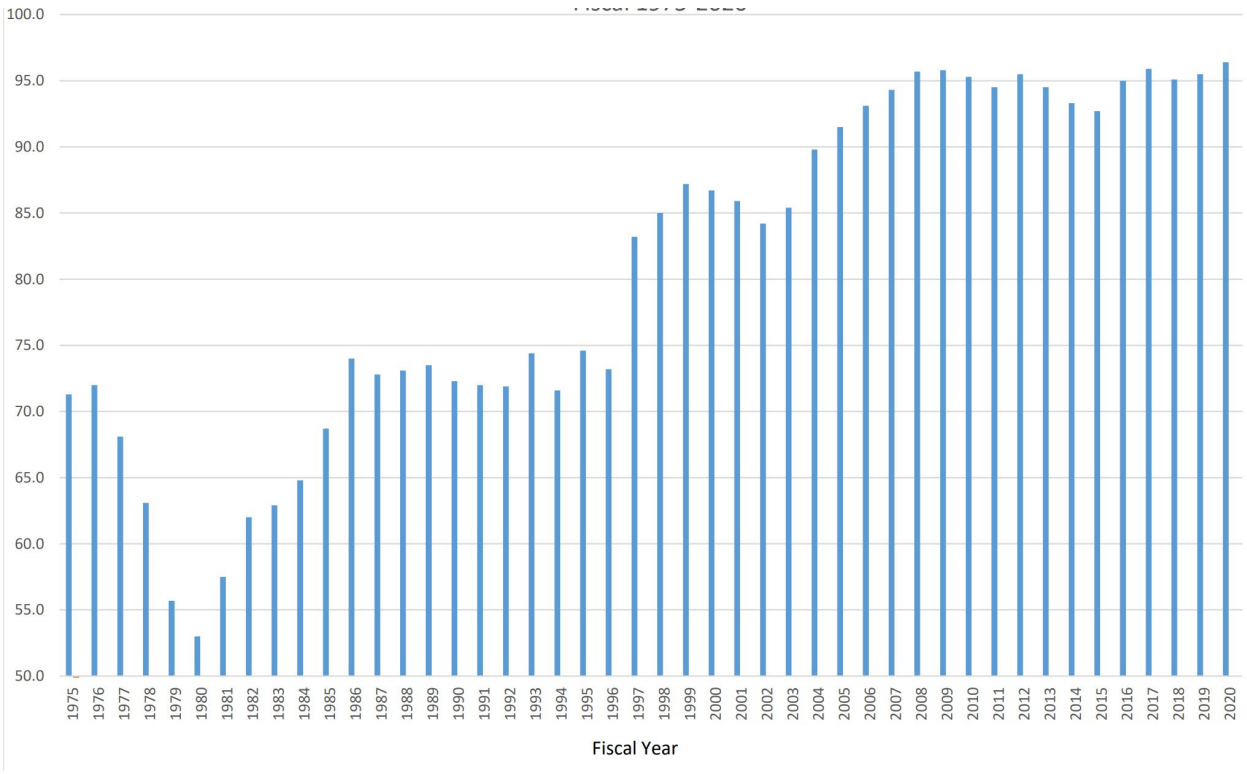
Figure 7-2
Floatables Booming, Netting and Offloading Sites

Annual Report on Best Management Practices for CSO's

Appendix 7.2.6: Figure 7.2-B - City-Wide Floatables Material Recovery 2004-2020



Appendix 7.2.7: Figure 7.2-C - NYC DSNY Scorecard Fiscal 1975 - 2020



Appendix 8: SITE CONNECTION PROPOSAL FORM

NYC Environmental Protection

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER & SEWER OPERATIONS

SITE CONNECTION PROPOSAL FORM
VALID FOR TWO (2) YEARS
[SC /]

PE/RA signature and original seal

A. PROJECT DATA:

Borough of _____ Building Dept. No (s) _____
Tax Block _____ Lot (s) _____ Zoning _____ Map No. _____
Project Location _____
Applicant _____
Address _____ Zip _____ Phone (___)_____
Owner _____
Address _____ Zip _____ Phone (___)_____

B. PROJECT USE:

TYPE: ☐ 1, 2, 3, Family ☐ Multiple Dwelling ☐ Commercial _____
Number of Buildings _____ Total Number of Dwelling Units _____

Ownership: ☐ Fee Simple ☐ Condominium ☐ Home Owner Association ☐ Other _____

C. SITE CONNECTIONS REQUESTED:

Total Developed Site Storm Flow _____ cfs

Allow. Storm Flow to the Sewers _____ cfs

☐ Detention ☐ Retention

	Sanit.	Storm	Comb.	Drywells
No. Requested	_____	_____	_____	xxxxxx
Size	_____	_____	_____	xxxxxx
Material (s)	_____	_____	_____	xxxxxx
Total Q (s)	_____	_____	_____	_____

Note: The property owner is responsible for plugging all inactive pre-existing sewer connections.

D. CONNECTION INFO:

1. ☐ Connection to existing
   ☐ Spur ☐ Riser ☐ Curb Connection
2. ☐ Proposed New Riser
3. ☐ Fold Spur in
4. ☐ Drill in
5. ☐ M.H. Conn ☐ Exist ☐ Prop
6. ☐ Reuse Plugged Connections

E. SEWER DATA:

1. P.D. Plan No. _____ Date Approved _____ Expiration Date _____
2. Date Construction Permit Was Issued _____
3. Date Sewer Was Accepted By DEP _____
4. Sanitary Discharge Tributary to: _____

			Location
Private Sewage Treatment Plant	☐ No	☐ Yes	_____
Private Pumping Station	☐ No	☐ Yes	_____
Private Sewer	☐ No	☐ Yes	_____

F. LOCATION PLAN: ☐ As shown below ☐ See Attached Location Plan Attachment "F"

Rev. 3/19

G. SUPPORT DOCUMENTS:

*1. Site Plan – 6 copies with hydraulic calculations _____
*2. Survey – 3 copies with watercourse stamp _____
*3. Tentative Lot Number Request Form – Attached _____ Not Applicable _____
¤4. Owners Consent for STP/PS Connection – Attached _____ Not Applicable _____
5. Department of Health Approval – Attached _____ Not Applicable _____
6. Department of Building Amendment Request – Attached _____ Not Applicable _____
ß7. Condo/HOA Prospectus or Affidavit – Attached _____ Not Applicable _____
8. Industrial Waste Approval – Attached _____ Not Applicable _____
9. Associated Mapping/Demapping Action – Attached _____ Not Applicable _____
10. Builders Pavement Plan – Attached _____ Not Applicable _____
11. Boring Logs – Attached _____ Not Applicable _____
12. Other (Specify) _____ Attached _____

* Requires PE/RA Stamp and Original Signature (L.S. for Survey)
¤ Must Be Notarized
ß Must be Notarized and have Corporate Seal Imposed

SEWER INFORMATION CERTIFIED BY D.E.P.

		PUBLIC	PRIVATE
1. There is / is not a sanitary sewer fronting the property available for connections.	SIZE	_____	_____
2. There is / is not a storm sewer fronting the property available for connections.	SIZE	_____	_____
3. There is / is not a combined sewer fronting the property available for connections.	SIZE	_____	_____

4. Sanitary discharge tributary to:

			Location
City Treatment Plant -	☐ NO	☐ YES	_____
Private Sewage Treatment Plant -	☐ NO	☐ YES	_____
Private Pumping Station -	☐ NO	☐ YES	_____

5. Distance to, and location of nearest allowable drainage plan sewer:
   a) Sanitary Outlet _____
   b) Storm Outlet _____
   c) Combined Outlet _____

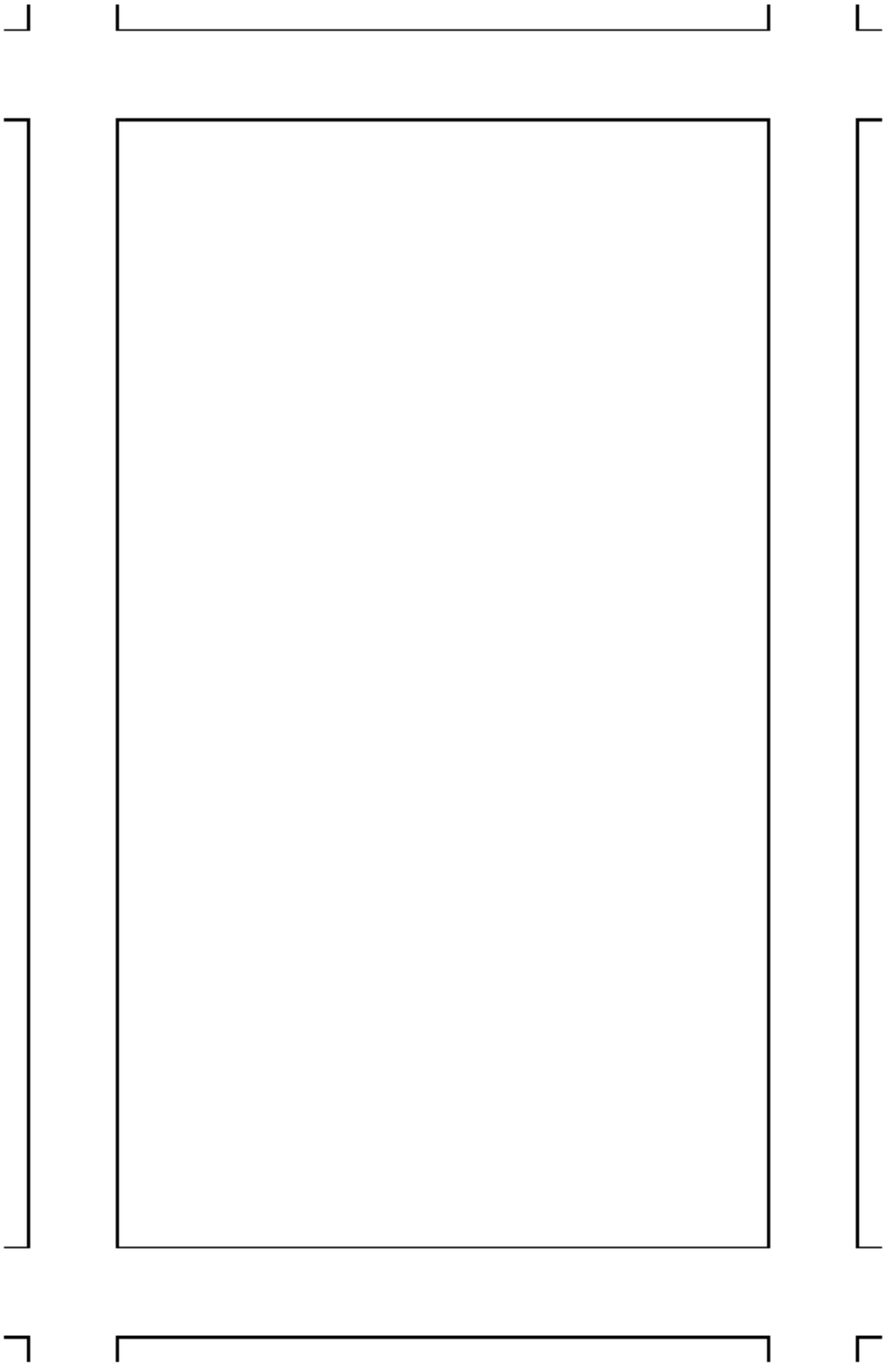
CERTIFICATION, RESTRICTIONS, SPECIAL CONDITIONS:

ADDITIONAL, INFORMATION, COMMENTS BY D.E.P. OFFICE:

1. Topo Map No. _____ Watercourse shown: ☐YES ☐ NO
2. Comments:

ATTACHMENT "F"

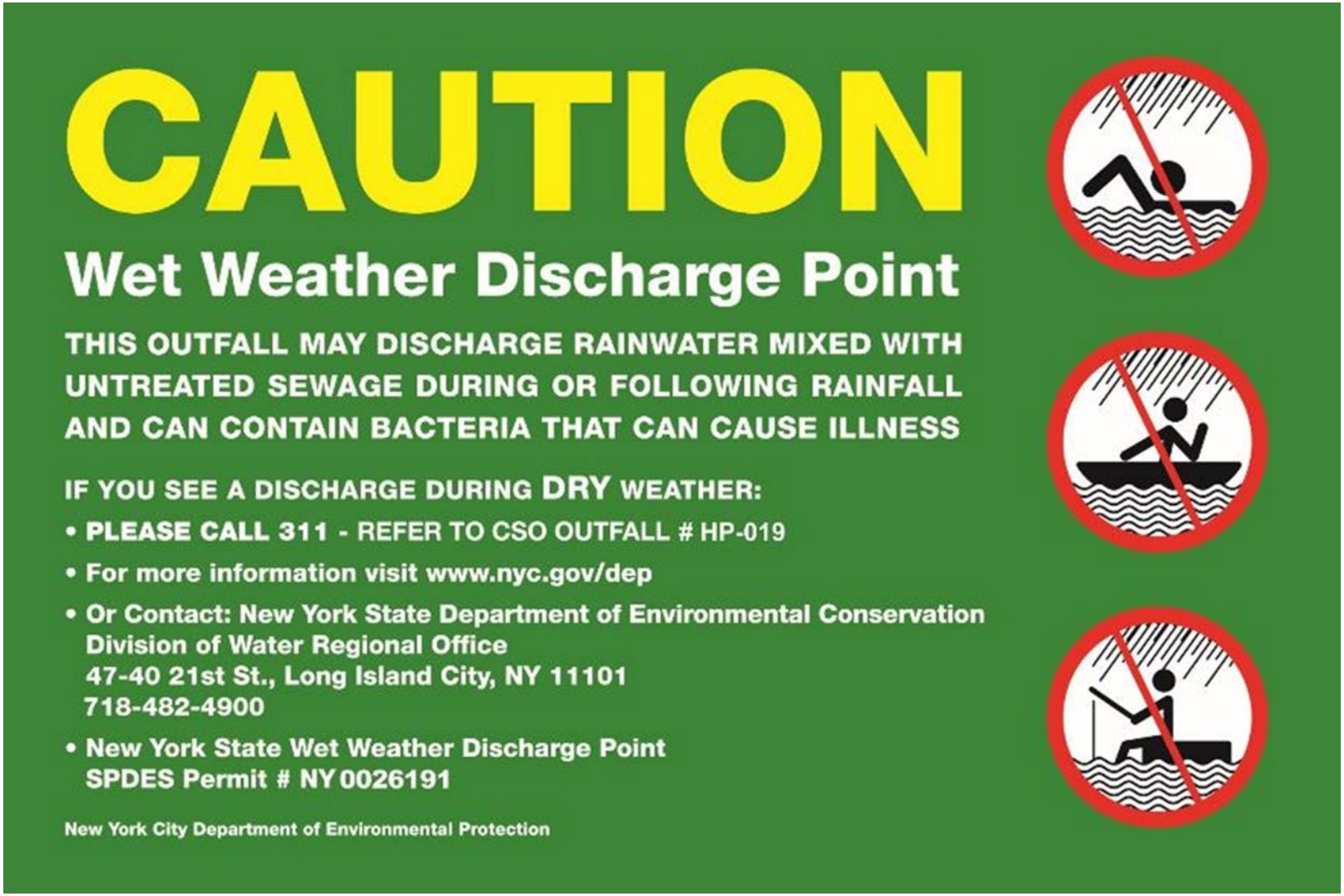
LOCATION PLAN:



Appendix 9:

- Appendix 9.1: CSO Sign Sample
- Appendix 9.2: Table: List of installed CSO Signs

Appendix 9.1: CSO SIGN SAMPLE



Appendix 9.2: TABLE: LIST OF INSTALLED CSO SIGNS

No	OUTFALLID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
1	**WI - 001**	**Wards Island W.P.C.P. Outfall**		Installed
2	WIM-002	EAST RIVER & E. 73rd STREET	REG #1	Installed
3	WIM-003	EAST RIVER & E. 74th STREET	REG #2A, 2B	Installed
4	WIM-004	EAST RIVER & E. 75th STREET	REG #3	Installed
5	WIM-005	EAST RIVER & E. 76th STREET	REG #4	Installed
6	WIM-006	EAST RIVER & E. 77th STREET	REG #5	Installed
7	WIM-007	EAST RIVER & E. 78th STREET	REG #6	Installed
8	WIM-008	EAST RIVER & E. 79th STREET	REG #7	Installed
9	WIM-009	EAST RIVER & E. 83rd STREET	REG #8	Installed
10	WIM-010	EAST RIVER & E. 84th STREET	REG #9	Installed
11	WIM-011	EAST RIVER & E. 86th STREET	REG #10	Installed
12	WIM-012	EAST RIVER & E. 89th STREET	REG #11	Installed
13	WIM-013	EAST RIVER & E. 90th STREET	REG #12	Installed
14	WIM-014	EAST RIVER & E. 91st STREET	REG #13	Installed
15	WIM-015	EAST RIVER & E. 92nd STREET	REG #14	Installed
16	WIM-016	EAST RIVER & E. 95th STREET	REG #15	Installed
17	WIM-017	EAST RIVER & E. 96th STREET	REG #16	Installed
18	WIM-018	EAST RIVER & E. 100th STREET	REG #17	Installed
19	WIM-019	EAST RIVER & E. 101st STREET	REG #18	Installed
20	WIM-020	EAST RIVER & E. 103rd STREET	REG #20	Installed
21	WIM-021	EAST RIVER & E. 104th STREET	REG #21	Installed
22	WIM-022	EAST RIVER & E. 105th STREET	REG #22	Installed
23	WIM-023	EAST RIVER & E. 106th STREET	REG #23	Installed
24	WIM-024	EAST RIVER & E. 110th STREET	REG #24	Installed
25	WIM-025	EAST RIVER & E. 114th STREET	REG #25	Installed
26	WIM-026	EAST RIVER & E. 115th STREET	REG #26	Installed
27	WIM-027	EAST RIVER & E. 116th STREET	REG #27	Installed

28	WIM-030	EAST RIVER & E. 119th STREET	REG #30	Installed
29	WIM-031	EAST RIVER & E. 120th STREET	REG #31	Installed
30	WIM-032	EAST RIVER & E. 121st STREET	REG #32	Installed
31	WIM-033	EAST RIVER & E. 122nd STREET	REG #33	Installed
No	**OUTFALLID**	**OUTFALL LOCATION**	**CONTRIBUTORS**	**STATUS/COMMENTS**
32	WIM-034	EAST RIVER & E. 124th STREET	REG #34	Installed
33	WIM-035	EAST RIVER & E. 125th STREET	REG #35	Installed
34	WIM-036	HARLEM RIVER & E. 129th STREET	REG #36	Installed
35	WIM-037	HARLEM RIVER & E. 130th STREET	REG #37	Installed
36	WIM-038	HARLEM RIVER & E. 135th STREET	REG #38	Installed
37	WIM-039	HARLEM RIVER & W. 140th STREET	REG #39	Installed
38	WIM-040	HARLEM RIVER & W. 141st STREET	REG #40	Installed
39	WIM-041	HARLEM RIVER & W. 142nd STREET	REG #41	Installed
40	WIM-042	HARLEM RIVER & W. 143rd STREET	REG #42	Installed
41	WIM-043	EAST RIVER & E. 102nd STREET	REG #19	Installed
42	WIM-044	HARLEM RIVER & W. 145th STREET	REG #44	Installed
43	WIM-045	HARLEM RIVER & W. 149th STREET	REG #45	Installed
44	WIM-046	HARLEM RIVER & W. 151st STREET	REG #46	Installed
45	WIM-047	HARLEM RIVER & W. 154th STREET	REG #47	Installed
46	WIM-048	HARLEM RIVER & W. 155th STREET	REG #48	Installed
47	WIM-050	HARLEM RIVER & W. 156th STREET	REG #50	Installed
48	WIM-051	HARLEM RIVER & W. 167th STREET	REG #51	Installed
49	WIM-052	HARLEM RIVER & W. 176th STREET	REG #52	Installed
50	WIB-053	HUDSON RIVER & W. 256th STREET	REG #R-3	Installed
51	WIB-054	HUDSON RIVER & W. 248th STREET	REG #R-2	Installed
52	WIB-055	HUDSON RIVER & W. 236th STREET	REG #R-1	Installed
53	WIB-056	HARLEM RIVER & W. 192nd STREET	REG #67	Installed
54	WIB-057	HARLEM RIVER & LANDING ROAD	REG #66	Installed
55	WIB-058	HARLEM RIVER & W. 178th STREET	REG #65	Installed
56	WIB-059	HARLEM RIVER & W. 176th STREET	REG #64	Installed

57	WIB-060	HARLEM RIVER & UNDER HIGH BRIDGE	REG #62	Installed
58	WIB-061	HARLEM RIVER & W. 167th STREET	REG #61	Installed
59	WIB-062	HARLEM RIVER & JEROME AVENUE	REG #60, 60A	Installed
60	WIB-063	HARLEM RIVER & S/O MCCOMBS DAM BRIDGE	REG #72	Installed
61	WIB-064	HARLEM RIVER & E. 149th STREET	REG #59	Installed
62	WIB-065	HARLEM RIVER & PARK AVENUE	REG #57	Installed
63	WIB-066	HARLEM RIVER & THIRD AVENUE BRIDGE	REG #56	Installed
64	WIB-067	HARLEM RIVER & LINCOLN AVENUE	REG #55	Installed
65	WIB-068	BRONX KILL & BROOK AVENUE	REG #53, 54	Installed
No	**OUTFALLID**	**OUTFALL LOCATION**	**CONTRIBUTORS**	**STATUS/COMMENTS**
66	WIB-069	BRONX KILL & CYPRESS AVENUE	REG #71	Installed
67	WIB-070	EAST RIVER & E. 134th STREET	REG #70	Installed
68	WIB-071	EAST RIVER & E. 138th STREET	REG #69	Installed
69	WIB-072	EAST RIVER & E. 149th STREET	REG #68	Installed
70	WIB-073	BRONX KILL & SAINT ANN'S AVENUE	REG #73	Installed
71	WIB-075	HARLEM RIVER & E. 138th STREET	REG #58	Installed
72	WIB-076	HARLEM RIVER & BRADLEY TERRACE	REG #MH-1	Installed
73	WIB-077	HARLEM RIVER & TEUNISSEN PLACE	REG #MH-2	Installed
74	WIB-078	HARLEM RIVER & W. BROADWAY BRIDGE	REG #MH-3	Installed
75	WIB-079	HUDSON RIVER & W. 261st STREET (MT. ST. VINCENT)	REG #R-4	Installed
76	**NR - 001**	**North River W.P.C.P. Outfall**		Installed
77	NR-002	HUDSON RIVER & W. 152nd STREET	REG #N-20,21,21A,21B	Installed
78	NR-003	HUDSON RIVER & W. 158th STREET	REG #N-19	Installed
79	NR-004	HUDSON RIVER & W. 171st STREET	REG #N-18	Installed
80	NR-005	HUDSON RIVER & W. 190th STREET	REG #N-17	Installed
81	NR-006	HUDSON RIVER & DYCKMAN STREET	REG #N-16	Installed
82	NR-007	HARLEM RIVER & W. 218th STREET	REG #N-15	Installed
83	NR-008	HARLEM RIVER & W. 216th STREET	REG #N-14	Installed
84	NR-009	HARLEM RIVER & W. 215th STREET	REG #N-13	Installed
85	NR-010	HARLEM RIVER & W. 211th STREET	REG #N-10, N-11, N-12	Installed

86	NR-011	HARLEM RIVER & W. 209th STREET	REG #N-9	Installed
87	NR-012	HARLEM RIVER & W. 207th STREET	REG #N-7	Installed
88	NR-013	HARLEM RIVER & W. 206th STREET	REG #N-6	Installed
89	NR-014	HARLEM RIVER & W. 205th STREET	REG #N-5	Installed
90	NR-016	HARLEM RIVER & W. 203rd STREET	REG #N-4	Installed
91	NR-017	HARLEM RIVER & W. 201st STREET	REG #N-3	Installed
92	NR-018	HARLEM RIVER & HIGHBRIDGE PARK	REG #N-1	Installed
93	NR-019	HUDSON RIVER & BANK STREET	REG #N-56	Installed
94	NR-020	HUDSON RIVER & JANE STREET	REG #N-55	Installed
95	NR-021	HUDSON RIVER & GANSEVOORT STREET	REG #N-54	Installed
96	NR-022	HUDSON RIVER & S/O W. 17th STREET	REG #N-51	Installed
97	NR-023	HUDSON RIVER & W. 18th STREET	REG #N-50	Installed
98	NR-024	HUDSON RIVER & W. 21st STREET	REG #N-48, N-49	Installed
99	NR-025	HUDSON RIVER & W. 24th STREET	REG #N-47	Installed
No	**OUTFALLID**	**OUTFALL LOCATION**	**CONTRIBUTORS**	**STATUS/COMMENTS**
100	NR-026	HUDSON RIVER & W. 26th STREET	REG #N-46	Installed
101	NR-027	HUDSON RIVER & W. 30th STREET	REG #N-45	Installed
102	*NR-028*	*HUDSON RIVER & W. 36th STREET*	*REG #N-43*	*WAIVER*
103	NR-029	HUDSON RIVER & W. 40th STREET	REG #N-42	Installed
104	NR-030	HUDSON RIVER & W. 43rd STREET	REG #N-39, N-40	Installed
105	NR-031	HUDSON RIVER & W. 44th STREET	REG #N-38	Installed
106	NR-032	HUDSON RIVER & W. 46th STREET	REG #N-36, N-37	Installed
107	NR-033	HUDSON RIVER & W. 48th STREET	REG #N-33, N-34	Installed
108	NR-034	HUDSON RIVER & W. 50th STREET	REG #N-32	Installed
109	NR-035	HUDSON RIVER & W. 56th STREET	REG #N-31	Installed
110	NR-036	HUDSON RIVER & W. 59th STREET	REG #N-30	Installed
111	NR-037	HUDSON RIVER & W. 72nd STREET	REG #N-29	Installed
112	NR-038	HUDSON RIVER & W. 80th STREET	REG #N-28	Installed
113	NR-039	HUDSON RIVER & W. 91st STREET	REG #N-27	Installed
114	NR-040	HUDSON RIVER & W. 96th STREET	REG #N-26, N-26A	Installed

115	NR-041	HUDSON RIVER & W. 108th STREET	REG #N-25	Installed
116	NR-042	HUDSON RIVER & W. 115th STREET	REG #N-24	Installed
117	NR-043	HUDSON RIVER & SAINT CLAIR PL	REG #N-23	Installed
118	NR-044	HUDSON RIVER & W. 138th STREET	REG #N-22	Installed
119	NR-045	HARLEM RIVER & ACADEMY STREET	REG #N-2	Installed
120	NR-046	HUDSON RIVER & W. 66th STREET	REG #N-29A	Installed
121	NR-047	HUDSON RIVER & W. 47th STREET	REG #N-35	Installed
122	NR-048	HUDSON RIVER & W. 42nd STREET	REG #N-40, N-41	Installed
123	NR-049	HUDSON RIVER & W. 14th STREET	REG #N-52	Installed
124	NR-050	HUDSON RIVER & BLOOMFIELD STREET	REG #N-53	Installed
125	NR-051	HUDSON RIVER & W. 49th STREET	N/A	Installed
126	NR-052	HUDSON RIVER & W. 34th STREET	REG #N-44	Installed
127	NR-055	HARLEM RIVER & W. 207th STREET	REG #N-7, N-8	Installed
128	NR-056	HUDSON RIVER & W. 142nd STREET	REG #N-22A	Installed
129	**HP - 001**	**Hunt's Point W.P.C.P. Outfall**		Installed
130	HP-002	EAST RIVER & TIFFANY STREET	REG #9, 9A	Installed
131	HP-003	EAST RIVER & FARRAGUT STREET	REG #10	Installed
132	HP-004	BRONX RIVER & WEST FARM ROAD	CSO-28, 28A	Installed
133	HP-005	HUTCHINSON RIVER & HOLLERS AVENUE PS	HOLLERS AVENUE P.S.	Installed
No	**OUTFALLID**	**OUTFALL LOCATION**	**CONTRIBUTORS**	**STATUS/COMMENTS**
134	HP-006	HUTCHINSON RIVER & BARTOW AVENUE	CO-OP CITY SO PS, ELY AVE PS	Installed
135	HP-007	BRONX RIVER & E. 177th STREET	CSO-27, 27A	Installed
136	HP-008	BRONX RIVER & LAFAYETTE AVENUE	CSO-26	Installed
137	HP-009	BRONX RIVER & METCALF AVENUE	REG #13	Installed
138	HP-010	BRONX RIVER & LACOMBE AVENUE	CSO-25	Installed
139	HP-011	EAST RIVER & WHITE PLAINS ROAD	REG #5, 6, 7	Installed
140	HP-012	WESTCHESTER CREEK & LAFAYETTE AVENUE	CSO-23A	Installed
141	HP-013	PUGSLEY'S CREEK & NEWMAN AVENUE	CSO-24	Installed
142	HP-014	WESTCHESTER CREEK & EAST TREMONT AVENUE	CSO-29, 29A	Installed
143	HP-015	WESTCHESTER CREEK & LATTING STREET	CSO-22	Installed

144	HP-016	WESTCHESTER CREEK & BRUCKNER EXPWY	REG #4	Installed
145	HP-017	EAST RIVER & EMERSON AVENUE	REG #11	Installed
146	HP-018	EAST RIVER & ROBINSON AVENUE	REG #12	Installed
147	HP-019	EAST RIVER & CALHOUN AVENUE	REG #3	Installed
148	HP-020	EAST RIVER & THROGS NECK BLVD	REG #2A	Installed
149	HP-021	EAST RIVER & PENNYFIELD AVENUE	REG #2	Installed
150	HP-022	EASTCHESTER BAY & E 177th STREET	REG #1	Installed
151	HP-023	HUTCHINSON RIVER & CONNER STREET	REG #15, CONNOR ST.PS	Installed
152	HP-024	HUTCHINSON RIVER & E 233rd STREET	REG #15A	Installed
153	HP-025	EAST RIVER & TRUXTON STREET	REG #8	Installed
154	HP-026	WEIR CREEK & ELLESWORTH AVENUE	REG #14	Installed
155	HP-028	EASTCHESTER BAY & OUTLOOK AVENUE	CSO-20	Installed
156	HP-029	EASTCHESTER BAY & WATT AVENUE	CSO-21	Installed
157	HP-031	HUTCHINSON RIVER & BELLAMY LOOP	CSO-32, CO-OP CITY N. P.S.	Installed
158	HP-032	EAST RIVER & RIKERS ISLAND NORTH	RIKER'S ISLAND N. P.S.	Installed
159	HP-033	WESTCHESTER CREEK & S/O BRUCKNER BLVD, E/O ZEREGA AVE	CSO-23	Installed
160	HP-034	WESTCHESTER CREEK & NEWBOLD AVENUE (CITY ISLAND)	COMMERCE AVENUE P.S.	Installed
161	HP-036	LONG ISLAND SOUND & SCHOFIELD STREET	CITY ISLAND P.S.	Installed
162	*HP-037*	*SHORE ROAD LAGOON & ORCHARD BEACH*	*ORCHARD BEACH P.S.*	*WAIVER*
163	HP-039	EAST RIVER & N/O HUNTS POINT AVE	HUNT'S PONT MARKET P.S.	Installed
164	**NC - 001**	**Newtown Creek W.P.C.P. Outfall**		Installed
165	NCB-002	WHALE CREEK & WWTP OVERFLOW	WWTP OVERFLOW	Installed
166	NCB-003	EAST RIVER & GREENPOINT AVENUE	REG #B-11	Installed
No	**OUTFALLID**	**OUTFALL LOCATION**	**CONTRIBUTORS**	**STATUS/COMMENTS**
167	NCB-004	EAST RIVER & QUAY STREET	REG #B-10	Installed
168	NCM-005	EAST RIVER & E. 63rd STREET	REG #M-51	Installed
169	NCB-006	EAST RIVER & N. 12th STREET	REG #B-9	Installed
170	NCB-007	EAST RIVER & N. 5th STREET	REG #B-8	Installed
171	NCB-008	EAST RIVER & METROPOLITAN AVENUE	REG #B-7	Installed
172	NCB-010	EAST RIVER & GRAND STREET	REG #B-6A	Installed

173	NCM-011	EAST RIVER & E. 48th STREET	REG #M-47A	Installed
174	NCB-012	EAST RIVER & S. 5th STREET	REG #B-6	Installed
175	NCB-013	WALLABOUT CHANNEL & DIVISION AVENUE	REG #B-5	Installed
176	NCB-014	WALLABOUT CHANNEL & KENT AVENUE	REG #B-3, B-4	Installed
177	NCB-015	ENGLISH KILLS & JOHNSON AVENUE	REG #B-1	Installed
178	*NCM-016*	*EAST RIVER & E. 46th STREET*	*REG #M-46*	*WAIVER*
179	NCM-017	EAST RIVER & E. 42nd STREET	REG #M-45A	Installed
180	NCM-018	EAST RIVER & E. 41st STREET	REG #M-45	Installed
181	NCB-019	NEWTOWN CREEK & METROPOLITAN AVENUE	REG #B-2	Installed
182	NCM-020	EAST RIVER & E. HOUSTON STREET	REG #M-31	Installed
183	NCB-021	NEWTOWN CREEK & MCGUINNESS BOULEVARD	CSO next to B-17	Installed
184	NCB-022	NEWTOWN CREEK & MCGUINNESS BOULEVARD	REG #B-17	Installed
185	NCB-023	NEWTOWN CREEK & FRANKLIN STREET	REG #B-16	Installed
186	NCB-024	EAST RIVER & DUPONT STREET	REG #B-15	Installed
187	NCB-025	EAST RIVER & FREEMAN STREET	REG #B-14	Installed
188	NCB-026	EAST RIVER & GREEN STREET	REG #B-13	Installed
189	NCB-027	EAST RIVER & HURON STREET	REG #B-12	Installed
190	NCM-028	EAST RIVER & DELANCEY STREET	REG #M-28	Installed
191	NCQ-029	NEWTOWN CREEK & 43rd STREET	REG #Q-2	Installed
192	NCM-030	EAST RIVER & E. 71st STREET	REG #M-51C	Installed
193	NCM-031	EAST RIVER & E. 70th STREET	REG #M-51A, M-15B	Installed
194	NCM-032	EAST RIVER & E. 61st STREET	REG #M-50	Installed
195	NCM-033	EAST RIVER & E. 57th STREET	REG #M-49	Installed
196	NCM-034	EAST RIVER & E. 54th STREET	REG #M-48	Installed
197	NCM-035	EAST RIVER & E. 53rd STREET	REG #M-48A	Installed
198	NCM-036	EAST RIVER & E. 49th STREET	REG #M-47	Installed
199	NCM-037	EAST RIVER & E. 41st STREET	REG #M-44	Installed
200	NCM-038	EAST RIVER & E. 38th STREET	REG #M-43B	Installed
No	**OUTFALLID**	**OUTFALL LOCATION**	**CONTRIBUTORS**	**STATUS/COMMENTS**
201	NCM-039	EAST RIVER & E. 37th STREET	REG #M-43A	Installed

202	NCM-040	EAST RIVER & E. 36th STREET	REG #M-43	Installed
203	NCM-041	EAST RIVER & E. 33rd STREET	REG #M-42	Installed
204	NCM-042	EAST RIVER & BROOME STREET	REG #M-27	Installed
205	NCM-043	EAST RIVER & E. 30th STREET	REG #M-41	Installed
206	*NCM-044*	*EAST RIVER & E. 29th STREET*	*REG #M-41A*	*WAIVER*
207	*NCM-045*	*EAST RIVER & E. 26th STREET*	*REG #M-40*	*WAIVER*
208	NCM-046	EAST RIVER & E. 24th STREET	REG #M-39, M-39A	Installed
209	NCM-047	EAST RIVER & E. 23rd STREET	REG #M-38B	Installed
210	NCM-048	EAST RIVER & E. 21st STREET	REG #M-38	Installed
211	NCM-049	EAST RIVER & E. 18th STREET	REG #M-37	Installed
212	NCM-051	EAST RIVER & OLD SLIP	REG #M-12	Installed
213	NCM-052	EAST RIVER & E. 14th STREET	REG #M-36	Installed
214	NCM-053	EAST RIVER & E. 11th STREET	REG #M-35	Installed
215	NCM-054	EAST RIVER & E. 8th STREET	REG #M-34	Installed
216	NCM-055	NEWTOWN CREEK & E. 6th STREET	REG #M-33	Installed
217	NCM-056	EAST RIVER & E. 3rd STREET	REG #M-32	Installed
218	NCM-057	EAST RIVER & STANTON STREET	REG #M-30	Installed
219	NCM-058	EAST RIVER & RIVINGTON STREET	REG #M-29	Installed
220	NCM-059	EAST RIVER & S/O GRAND STREET	REG #M-26	Installed
221	NCM-060	EAST RIVER & S/O CORLEARS HOOK PARK	REG #M-25	Installed
222	NCM-061	EAST RIVER & JACKSON STREET	REG #M-23	Installed
223	NCM-062	EAST RIVER & GOUVERNEUR SLIP E.	REG #M-22	Installed
224	NCM-063	EAST RIVER & JEFFERSON STREET	REG #M-21	Installed
225	NCM-064	EAST RIVER & MARKET SLIP	REG #M-20	Installed
226	NCM-065	EAST RIVER & S/O CATHERINE STREET	REG #M-18	Installed
227	NCM-066	EAST RIVER & ROBERT WAGNER SR. PLACE	REG #M-17	Installed
228	NCM-067	EAST RIVER & MAIDEN LANE	REG #M-13	Installed
229	NCM-068	EAST RIVER & COENTIES SLIP	REG #M-11	Installed
230	NCM-069	EAST RIVER & BROAD STREET	REG #M-10	Installed
231	*NCM-070*	*HUDSON RIVER & BATTERY PLACE*	*REG #M-9*	*WAIVER*

232	*NCM-071*	*HUDSON RIVER & RECTOR STREET*	*REG #M-6, M-7*	*WAIVER*
233	*NCM-072*	*HUDSON RIVER & VESEY STREET*	*REG #M-5*	*WAIVER*
234	*NCM-073*	*HUDSON RIVER & DUANE STREET*	*REG #M-4*	*WAIVER*
No	**OUTFALLID**	**OUTFALL LOCATION**	**CONTRIBUTORS**	**STATUS/COMMENTS**
235	NCM-074	HUDSON RIVER & VESTRY STREET	REG #M-3	Installed
236	NCM-075	HUDSON RIVER & WATTS STREET	REG #M-2	Installed
237	NCM-076	HUDSON RIVER & CLARKSON STREET	REG #M-1	Installed
238	NCQ-077	MASPETH CREEK & 49th STREET	REG #Q-1	Installed
239	NCM-078	EAST RIVER & N/O DOVER STREET	REG #M-16	Installed
240	NCM-080	HUDSON RIVER & N/O VANDAM STREET	REG #TG-2	Installed
241	NCM-081	HUDSON RIVER & N/O CHARLES STREET	REG #TG-1	Installed
242	NCB-082	EAST RIVER & S. 8th STREET	REG #B-5A	Installed
243	NCB-083	NEWTOWN CREEK & METROPOLITAN/SCOTT AVENUE	N/A	Installed
244	NCM-087	EAST RIVER & E 22nd STREET	REG #M-38A	Installed
245	**RH - 001**	**Red Hook W.P.C.P. Outfall**		Installed
246	RH-002	EAST RIVER & HUDSON AVENUE	REG #R-21A	Installed
247	RH-003	EAST RIVER & HUDSON AVENUE	REG #R-21	Installed
248	RH-005	EAST RIVER & GOLD STREET	REG #R-20A	Installed
249	RH-006	EAST RIVER & PEARL STREET	REG #R-19A	Installed
250	RH-007	EAST RIVER & ADAMS STREET	REG #R-19	Installed
251	RH-008	EAST RIVER & WASHINGTON STREET	REG #R-18A	Installed
252	RH-009	EAST RIVER & MAIN STREET	REG #R-18	Installed
253	RH-010	EAST RIVER & ORANGE STREET	REG #R-16	Installed
254	RH-011	EAST RIVER & MONTAGUE STREET	REG #R-15	Installed
255	RH-012	EAST RIVER & CADMAN PLAZA	REG #R-17	Installed
256	RH-013	EAST RIVER & JORALEMON STREET	REG #R-14	Installed
257	RH-014	EAST RIVER & ATLANTIC AVENUE	REG #R-13	Installed
258	RH-016	EAST RIVER & AMITY STREET	REG #R-12	Installed
259	RH-018	EAST RIVER & KANE STREET	REG #R-11	Installed
260	RH-019	BUTTERMILK CHANNEL & HAMILTON AVENUE	REG #R-9	Installed

261	RH-020	BUTTERMILK CHANNEL & DEGRAW STREET	REG #R-10	Installed
262	RH-021	BUTTERMILK CHANNEL & SACKETT STREET	REG #R-9A	Installed
263	RH-022	ATLANTIC BASIN & BOWNE STREET	REG #R-8	Installed
264	RH-023	ATLANTIC BASIN & COMMERCE STREET	REG #R-7	Installed
265	RH-024	ATLANTIC BASIN & VERONA STREET	REG #R-6	Installed
266	RH-025	ATLANTIC BASIN & PIONEER STREET	REG #R-5	Installed
267	RH-028	BUTTERMILK CHANNEL & WOLCOTT STREET	REG #R-2	Installed
268	RH-029	UPPER NEW YORK BAY & VAN BRUNT STREET	REG #R-1, VAN BLANT ST. PS	Installed
No	**OUTFALLID**	**OUTFALL LOCATION**	**CONTRIBUTORS**	**STATUS/COMMENTS**
269	RH-030	GOWANUS CANAL & HICKS STREET	CSO-2	Installed
270	RH-031	GOWANUS CANAL & CREAMER STREET	BOND-LORRAINE SWR RELIEF	Installed
271	RH-033	GOWANUS CANAL & DOUGLASS STREET (E)	REG #R-25	Installed
272	RH-034	HEAD OF GOWANUS CANAL	GOWANUS PS	Installed
273	RH-035	GOWANUS CANAL & BOND STREET	CSO-3, BOND-LORR SWR REL.	Installed
274	RH-036	GOWANUS CANAL & PRESIDENT STREET	REG #R-22	Installed
275	RH-037	GOWANUS CANAL & SACKETT STREET	REG #R-23	Installed
276	RH-038	GOWANUS CANAL & DEGRAW STREET	REG #R-24	Installed
277	RH-040	EAST RIVER & NAVY YARD	REG #R-26	Installed
278	**TI - 001**	**Tallman Island W.P.C.P. Outfall**		Installed
279	TI-003	POWELL'S COVE & N/O 7th AVENUE	REG #10A, 10B	Installed
280	TI-004	EAST RIVER & 151st STREET	REG #11	Installed
281	TI-005	EAST RIVER & 154th STREET	REG #12	Installed
282	TI-006	LITTLE NECK BAY & 24th AVENUE	24 AVENUE P.S.	Installed
283	TI-007	ALLEY CREEK & NORTHERN BLVD	OLD DOUG P.S.	Installed
284	TI-008	ALLEY CREEK & 46th AVENUE	REG #46, 47, 48, 49	Installed
285	*TI-009*	*LITTLE NECK BASIN & DOUG. BAY P.S.*	*DOUG BAY P.S.*	*WAIVER*
286	TI-010	FLUSHING RIVER & ROOSEVELT AVENUE	REG #30, 31, 40, 44	Installed
287	TI-011	FLUSHING BAY & 32nd AVENUE	REG #9, 51, 52, 53, 54	Installed
288	TI-012	FLUSHING BAY & 29th AVENUE	122ND STREET P.S.	Installed
289	TI-014	FLUSHING BAY & 23rd AVENUE	REG #7	Installed

290	TI-015	FLUSHING BAY & 22nd AVENUE	REG #6	Installed
291	TI-016	FLUSHING BAY & 20th AVENUE	REG #5	Installed
292	TI-017	FLUSHING BAY & 15th AVENUE	REG #4	Installed
293	TI-018	FLUSHING BAY & 14th AVENUE	REG #3	Installed
294	TI-019	EAST RIVER & 9th AVENUE	REG #2	Installed
295	TI-020	EAST RIVER & COLLEGE PLACE	REG #1	Installed
296	TI-022	FLUSHING RIVER & 40th ROAD	REG #55, 56, 57, 58	Installed
297	TI-023	LITTLE BAY & CRYDERS LANE	REG #13, CLEARVIEW P.S.	Installed
298	TI-024	ALLEY POND & 61st AVENUE	NEW DOUG P.S.	Installed
299	TI-025	ALLEY CREEK (W) & 400' SOUTH OF LIRR BRIDGE	Alley Creek CSO Storage Facility	Installed
300	**BB - 001**	**Bowery Bay W.P.C.P. Outfall**		Installed
301	BB-002	RIKER'S ISLAND CHANNEL & 45th STREET	REG #2	Installed
No	**OUTFALLID**	**OUTFALL LOCATION**	**CONTRIBUTORS**	**STATUS/COMMENTS**
302	BB-003	BOWERY BAY & HAZEN STREET	REG #3	Installed
303	BB-004	DUTCH KILLS & BORDEN AVENUE	REG #L-3, L-41	Installed
304	BB-005	BOWERY BAY & E/O 81st STREET	REG #4	Installed
305	BB-006	FLUSHING BAY & W/O MARINA (114th STREET)	REG #10, 12, 13	Installed
306	BB-007	FLUSHING BAY & 27th AVENUE	REG #5	Installed
307	BB-008	FLUSHING BAY & 31st DR (108th STREET)	REG #6, 7, 8, 9	Installed
308	BB-009	DUTCH KILLS & HUNTERS POINT AVE.	REG #L-3B, L-37,L-38,L-41,L-3A	Installed
309	BB-010	DUTCH KILLS & QUEENS-MIDTOWN EXPWY	REG #L-3C	Installed
310	BB-011	NEWTOWN CREEK & GREENPOINT AVENUE	REG #L-1	Installed
311	BB-012	NEWTOWN CREEK & 35th STREET	REG #L-2	Installed
312	BB-013	NEWTOWN CREEK & 11th STREET	REG #L-8	Installed
313	BB-014	NEWTOWN CREEK & VERNON BLVD	REG #L-9	Installed
314	BB-015	NEWTOWN CREEK & 5th STREET	REG #L-10	Installed
315	BB-016	EAST RIVER & 51st AVENUE	REG #L-11	Installed
316	BB-017	EAST RIVER & 50th AVENUE	REG #L-12	Installed
317	BB-018	EAST RIVER & 49th AVENUE	REG #L-12A	Installed
318	BB-021	EAST RIVER & 47th AVENUE	REG #L-15	Installed

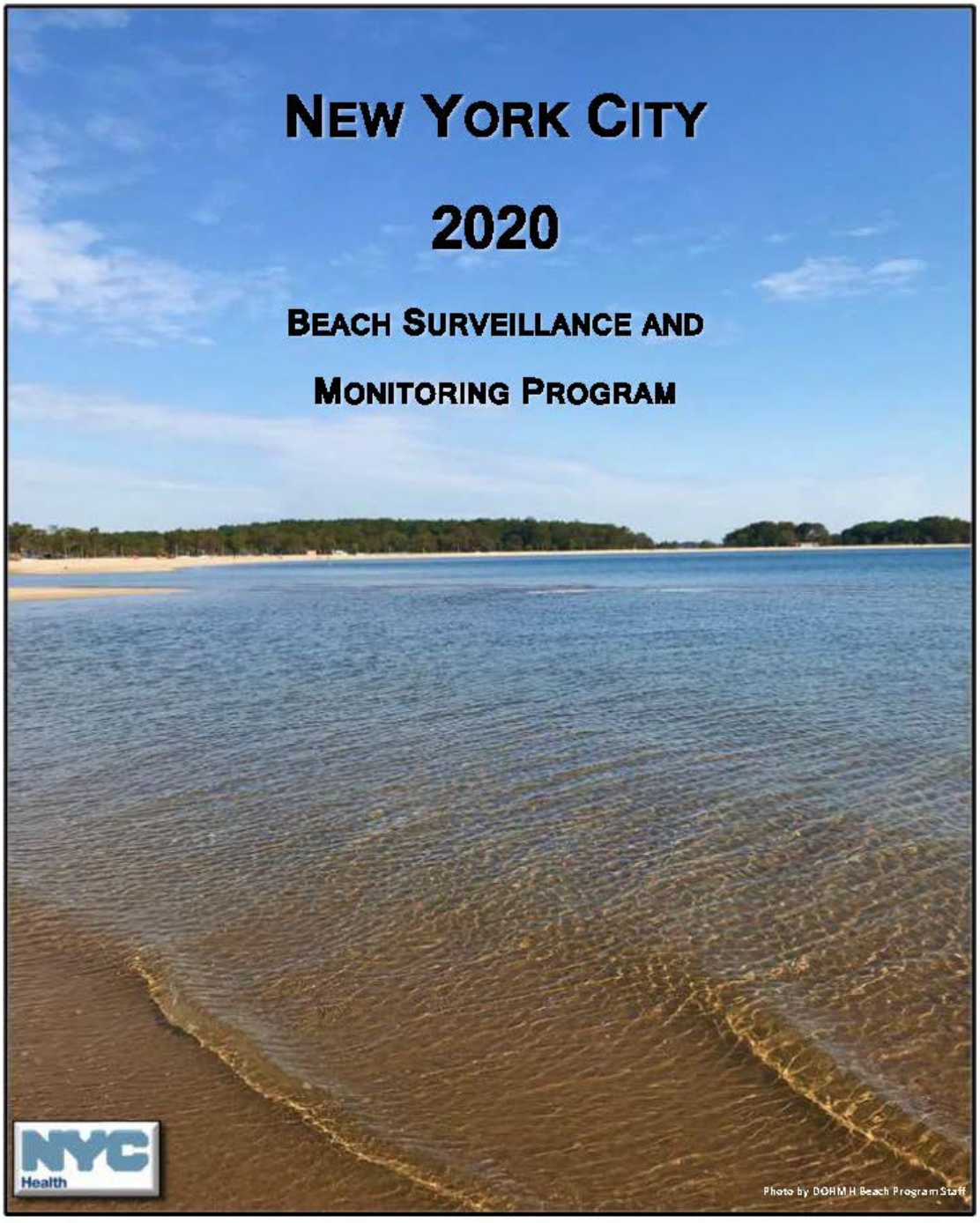
319	BB-022	EAST RIVER & 5th STREET	REG #L-16	Installed
320	BB-023	EAST RIVER & 44th DRIVE	REG #L-17	Installed
321	BB-024	EAST RIVER & 43rd AVENUE	REG #L-18	Installed
322	BB-025	EAST RIVER & 41st AVENUE	REG #L-19	Installed
323	BB-026	DUTCH KILLS & BETW. 28th & 29th STREET	REG #L-4, L-39, L-40, L-42	Installed
324	BB-027	EAST RIVER & 38th AVENUE	REG #L-20	Installed
325	BB-028	EAST RIVER & 37th AVENUE	REG #L-21	Installed
326	BB-029	EAST RIVER & BROADWAY	REG #L-22	Installed
327	BB-030	EAST RIVER & 30th ROAD	REG #L-23	Installed
328	BB-032	EAST RIVER & MAIN AVENUE	REG #L-29, L-29A, MH-15	Installed
329	BB-033	EAST RIVER & 27th AVENUE	REG #L-27	Installed
330	BB-034	EAST RIVER & HOYT AVENUE	REG #L-30	Installed
331	BB-035	EAST RIVER & DITMARS BLVD	REG #L-31	Installed
332	BB-036	EAST RIVER & 21st AVENUE	REG #L-32	Installed
333	BB-037	EAST RIVER & 20th AVENUE	REG #L-33	Installed
334	BB-040	DUTCH KILLS & 49th AVENUE	REG #L-5	Installed
335	BB-041	LUYSTER CREEK & 19th AVENUE	REG #1	Installed
No	**OUTFALLID**	**OUTFALL LOCATION**	**CONTRIBUTORS**	**STATUS/COMMENTS**
336	BB-042	DUTCH KILLS & W/O 27th STREET	REG #L-6	Installed
337	BB-043	NEWTOWN CREEK & 11th STREET	REG #L-7	Installed
338	BB-045	EAST RIVER & 9th STREET	REG #L-25	Installed
339	BB-046	EAST RIVER & 3rd STREET	REG #L-26	Installed
340	BB-047	EAST RIVER & ASTORIA BLVD	REG #L-28	Installed
341	BB-049	NEWTOWN CREEK & 21st STREET	N/A	Installed
342	BB-053	HELL GATE & 20th AVENUE	N/A	Installed
343	**26W - 001**	**26th Ward W.P.C.P. Outfall**		Installed
344	26W-002	HENDRIX CREEK & PLANT BYPASS	PLANT BYPASS	Installed
345	26W-003	FRESH CREEK BASIN & WILLIAMS AVENUE	REG #2	Installed
346	26W-004	HENDRIX CREEK & HENDRIX STREET	REG #1	Installed
347	26W-005	SPRING CREEK & SPRING CREEK AUXILIARY WWTP	REG #3, JAM REG #2	Installed

348	**CI - 001**	**Coney Island W.P.C.P. Outfall**		Installed
349	**CI - 002**	**Coney Island W.P.C.P. Outfall**		Installed
350	CI-004	PAERDEGAT BASIN & FLATLANDS AVENUE	TG #5	Installed
351	CI-005	PAERDEGAT BASIN & FLATLANDS AVENUE	REG #1, 2, 3, 4	Installed
352	CI-006	PAERDEGAT BASIN & RALPH AVENUE	REG #6	Installed
353	**OH - 001**	**Owls Head W.P.C.P. Outfall**		Installed
354	OH-002	UPPER NEW YORK BAY & 64th STREET	REG #6A, 6B, 6C	Installed
355	OH-003	UPPER NEW YORK BAY & 49th STREET	REG #7A, 7B, 7C	Installed
356	*OH-004*	*UPPER NEW YORK BAY & 43rd STREET*	*REG #7D, 19th ST. PS*	*WAIVER*
357	OH-005	GOWANUS CANAL & CARROLL STREET	3rd AVE SEWER RELIEF	Installed
358	OH-006	GOWANUS CANAL & 19th STREET (N0RTH SIDE)	3rd AVE SEWER RELIEF	Installed
359	OH-007	GOWANUS CANAL & 2nd AVENUE	2nd AVENUE P.S.	Installed
360	OH-015	GRAVESEND BAY & 17th AVENUE	REG #9A, 9B, 9C	Installed
361	OH-017	UPPER NEW YORK BAY & 92nd STREET	REG #1	Installed
362	OH-018	UPPER NEW YORK BAY & 79th STREET	REG #2, 3	Installed
363	OH-019	UPPER NEW YORK BAY & 71st STREET	REG #4	Installed
364	OH-020	UPPER NEW YORK BAY & BAY RIDGE AVENUE	REG #5	Installed
365	OH-021	CONEY ISLAND CREEK & W 15th STREET	REG #10, 11, AVE.V P.S.	Installed
366	OH-022	GOWANUS BAY & 32nd STREET (Bush Terminal Complex)	2nd AVE SEWER RELIEF	Installed
367	OH-024	GOWANUS CANAL & 23rd STREET	3rd AVE SEWER RELIEF	Installed
368	***Jam - 001***	***Jamaica W.P.C.P. Outfall***		***WAIVER***
369	JAM-003	BERGEN BASIN & 123rd STREET	REG #3	Installed
No	**OUTFALLID**	**OUTFALL LOCATION**	**CONTRIBUTORS**	**STATUS/COMMENTS**
370	JAM-003A	BERGEN BASIN & 123rd STREET	REG #14	Installed
371	JAM-005	HEAD OF THURSTON BASIN & JFK AIRPORT	REG #6, 7, 8, 9	Installed
372	JAM-006	HEAD OF BERGEN BASIN & JFK AIRPORT	REG #1, 4, 10, SECONDARY PLANT EFFLUENT	Installed
373	JAM-007	HEAD OF THURSTON BASIN & JFK AIRPORT (NEXT TO JA-005)	REG #6, 7, 8, 9	Installed
374	**Roc - 001**	**Rockaway W.P.C.P. Outfall**		Installed
375	ROC-003	JAMAICA BAY & PLANT BYPASS	PLANT BYPASS	Installed
376	ROC-009	JAMAICA BAY & BEACH 98th STREET	REG #D-6	Installed

377	ROC-014	JAMAICA BAY & BEACH 91st STREET	REG #D-2	Installed
378	ROC-016	NORTON BASIN & BAYSWATER AVENUE	BAYSWATER P.S.	Installed
379	ROC-017	BANNISTER CREEK & BEACH 3rd STREET	SEAGIRT AVE. P.S.	Installed
380	ROC-029	JAMAICA BAY & BEACH 106 STREET	REG #1, 2	Installed
381	ROC-031	MOTT BASIN & REDFERN AVENUE	NAMEOKE P.S.	Installed
382	ROC-032	JAMAICA BAY & BEACH 98th STREET	REG #D-7,D-8,D-9,D-10,D-11	Installed
383	ROC-033	JAMAICA BAY & BEACH 106th STREET	REG #D-12	Installed
384	**OB - 001**	**Oakwood Beach W.P.C.P. Outfall**		Installed
385	OB-001A	LOWER NEW YORK BAY & PLANT BYPASS	PLANT BYPASS	Installed
386	**PR - 001**	**Port Richmond W.P.C.P. Outfall**		Installed
387	PR-002	KILL VAN KULL & E/O TAYLOR STREET	REG #R-34	Installed
388	PR-003	KILL VAN KULL & BROADWAY	REG #R-33	Installed
389	PR-004	KILL VAN KULL & BARD AVENUE	REG #R-29	Installed
390	PR-005	KILL VAN KULL & W/O KISSEL AVENUE	REG #R-28	Installed
391	PR-006	KILL VAN KULL & CLINTON AVENUE	REG #R-23	Installed
392	PR-007	KILL VAN KULL & SAILOR SNUG HARBOR	REG #R-27	Installed
393	PR-008	KILL VAN KULL & FRANKLIN AVENUE	REG #R-21	Installed
394	PR-009	KILL VAN KULL & JERSEY STREET	REG #R-20	Installed
395	PR-010	UPPER NEW YORK BAY & ST. PETERS PLACE	REG #R-19	Installed
396	PR-011	UPPER NEW YORK BAY & HAMILTON AVENUE	REG #R-18	Installed
397	PR-013	UPPER NEW YORK BAY & VICTORY BLVD.	REG #R-17	Installed
398	PR-014	UPPER NEW YORK BAY & BALTIC STREET	REG #R-15	Installed
399	PR-015	UPPER NEW YORK BAY & S/O DOCK STREET	REG #R-11	Installed
400	PR-016	UPPER NEW YORK BAY & MARINE HOSPITAL	REG #R-10	Installed
401	PR-017	UPPER NEW YORK BAY & NORWOOD AVENUE	REG #R-9	Installed
402	PR-018	UPPER NEW YORK BAY & N/O CAMDEN STREET	REG #R-8	Installed
No	**OUTFALLID**	**OUTFALL LOCATION**	**CONTRIBUTORS**	**STATUS/COMMENTS**
403	PR-019	UPPER NEW YORK BAY & S/O LYNHURST AVENUE	REG #R-7	Installed
404	PR-020	UPPER NEW YORK BAY & N/O SYLVA LANE	REG #R-5	Installed
405	PR-021	UPPER NEW YORK BAY & HYLAN BOULEVARD	REG #R-4	Installed

406	PR-023	UPPER NEW YORK BAY & NAUTILUS STREET	REG #R-3	Installed
407	PR-023A	UPPER NEW YORK BAY & NAUTILUS STREET	REG #R-2	Installed
408	PR-023B	UPPER NEW YORK BAY & NAUTILUS STREET	REG #R-1	Installed
409	PR-024	NEWARK BAY & W/O HOLLAND AVENUE	REG #R-1W	Installed
410	PR-025	NEWARK BAY & SOUTH AVENUE	REG #R-2W	Installed
411	PR-026	NEWARK BAY & HARBOR ROAD	REG #R-3W	Installed
412	PR-027	NEWARK BAY & UNION AVENUE	REG #R-4W	Installed
413	PR-028	NEWARK BAY & HOUSEMAN AVENUE	REG #R-5W	Installed
414	PR-029	NEWARK BAY & NICHOLAS STREET	REG #R-6W	Installed
415	PR-030	UPPER NEW YORK BAY & SYLVATON TER..	REG #R-6	Installed
416	PR-031	UPPER NEW YORK BAY & CANAL STREET	REG #13	Installed
417	PR-032	UPPER NEW YORK BAY & VICTORY BOULEVARD	REG #16	Installed
418	PR-033	KILL VAN KULL & ELIZABETH AVENUE	REG #R-31	Installed
419	PR-034	KILL VAN KULL & BEMENT AVENUE	REG #R-32	Installed
420	PR-035	KILL VAN KULL & BODINE STREET	REG #R-35	Installed
421	PR-036	BODINE CREEK & RECTOR STREET	REG #R-36	Installed
422	PR-037	KILL VAN KULL & RICHMOND AVENUE	REG #R-37	Installed

Appendix 10: New York City 2020 Beach Surveillance and Monitoring Program



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SECTION 1

INTRODUCTION

In accordance with the New York City Administrative Code §18-131(c)(4), this annual report summarizes the 2020 New York City Beach Surveillance and Monitoring Program for beaches permitted by the Department of Health and Mental Hygiene (DOHMH or the "Department"). This law requires that the Health Commissioner "forward a combined report of the dates and results of all inspections of all beaches and the dates and reasons for any warning advisory or closure, and such other information deemed appropriate by the Commissioner of Health and Mental Hygiene, for the Friday proceeding the last Monday of May until the Friday after the first Monday of September of each year, to the mayor, the public advocate and the speaker of the council."

With the principal goal of protecting ocean beachgoers from potential health and safety hazards, the Department closely monitors and conducts surveillance of permitted beaches in New York City. Under the regulatory directive and authority of both Article 167 of the New York City Health Code (Article 167) and Subpart 6-2 of the New York State Sanitary Code (Subpart 6-2), the Department administers the Beach Surveillance and Monitoring Program for all beaches operating within the city limits and with a permit issued by the Department. The Program responsibilities include: 1) beach monitoring and surveillance, 2) public notification and communication and 3) safety inspections.

The city's beaches function as an important recreational resource for city residents and neighboring communities. As shown in Figure 1 (page 2) and Table 1 (page 3), there are eight public beaches operated by the Department of Parks and Recreations (the Parks Department) and 17 privately operated beaches permitted within New York City limits.

This year, due to the COVID-19 public health emergency, the bathing beach season was limited from July 1 to September 7, 2020.

FIGURE 1: NEW YORK CITY PERMITTED BEACHES

= Public Beach (NYC Dept. Parks and Recreation)

TABLE 1: NEW YORK CITY PERMITTED BEACHES AND WATER BODY IDENTIFICATION

Borough	Beaches	Water Body
Brooklyn	*Public:* Coney Island, Manhattan *Private:* Seagate, Kiddie Gerritsen, Kingsborough	Lower New York Harbor
Bronx	*Public:* Orchard Beach *Private:* American Turner, Danish American, Manhem, White Cross Fishing, Morris Yacht Club, Schuyler Hill, Trinity Danish, Locust Point Yacht Club, West Fordham Street	Eastchester Bay, Western Long Island Sound
Queens	*Public:* Rockaway *Private:* Breezy Point	Atlantic Ocean
	Private: Douglaston Manor, Whitestone Booster Civic Association	Western Long Island Sound
Staten Island	*Public:* South Beach, Midland, Cedar Grove, Wolfe's Pond Park *Private:* Staten Island YMCA	Lower New York Bay

1.1 Public Risk Communication

The Department continued its efforts to improve public notification and risk communication during the beach season. Easy-to-interpret signs shown in Figure 2 were used for beach closures and warnings in 2020.

FIGURE 2: BEACH WARNING AND CLOSED SIGNS

"Know Before You Go", a free texting service introduced in 2014, was continued for the 2020 beach season. The service enables subscribers to make informed decisions before they go to a public beach by checking if the beach is open or closed or if there are any warnings due to wet weather conditions or water quality concerns. Subscribers simply text "BEACH" to 877-877 to learn the status of any of the eight public beaches in New York City. This tool also can be used by the Department to deliver notifications of high priority water quality warnings or closures, as well as safety-related messages such as warnings for high rip currents, closures for extreme weather and when beaches open and close for the season. For example, in preparation for beach openings with special COVID-19 operating rules, DOHMH issued the following notification to all enrolled users:

> *Beaches will open for swimming on 7/1. Stay home if sick, stay at least 6 feet away from other groups, wear a face covering when not in water, wash hands often or use hand sanitizer.*
>
> *Beach capacity has been reduced, and only swim when lifeguards are present. Check nyc.gov/beaches for more info.*

In 2020, because of the public health emergency, the Department did not promote "Know Before You Go" through its social media channels. Still, there were modest increases in enrollment. At the beginning of the season, the texting service had 12,574 English-language subscribers and 574 Spanish-language subscribers. By the close of the beach season, there were 14,313 English-language subscribers (12% increase) and 605 Spanish-language subscribers (5% increase).

FIGURE 3: KNOW BEFORE YOU GO TEXTING PROGRAM

SECTION 2

BACKGROUND INFORMATION

This chapter provides background information on the New York City Beach Surveillance and Monitoring Program.

2.1 Water Quality Criteria

Under the New York State Sanitary Code §6-2.15, Article §167.13 of the New York City Health Code and the Federal Beaches Environmental Assessment and Coastal Health Act of 2000 (BEACH), enterococcus is the indicator organism mandated for evaluating the microbiological quality of marine (saline) recreational beach water.

Under the New York State Sanitary Code and the New York City Health Code, enterococci concentrations for a single sample shall not exceed 104 Colony Forming Units (CFUs) per 100 mL (61 CFUs per 100 ml for fresh water), and the enterococci geometric mean shall not exceed 35 CFUs per 100 mL (33 CFUs per 100 ml for fresh water) for a series of five or more samples collected during a 30-day period. The geometric mean and single sample maximum are determined by analyzing samples for the presence and quantification of enterococci using membrane-filtration, EPA method 1600.

In November 2012, the Environmental Protection Agency (EPA) released revised Recreational Water Quality Criteria (RWQC). The revised criteria use a geometric mean and a statistical threshold value to indicate whether waters designated for primary contact recreation use are protective of human health. The 2012 revised criteria for marine waters are a 30-day geometric mean of 35 enterococci (CFU/100 mL) and a statistical threshold value of 130 enterococci (CFU/100 mL); the statistical threshold value is calculated as no more than 10% of samples within 30 days shall exceed the criteria. The EPA also introduced a Beach Action Value (BAV) of 70 enterococci (CFU/100 mL) to be used as a precautionary notification threshold for beach management, replacing earlier guidance that provided single sample maximum values. These water quality criteria have been adopted at the State level by the New York Department of Environmental Conservation (DEC) and became effective November 1, 2019. The New York State Department of Health (NYSDOH) plans to also promulgate equivalent bathing beach water quality standards in the State Sanitary Code, which may then be implemented by local beach programs in future seasons.

Also in the revised 2012 RWQC, EPA published criteria and standards for molecular analysis to detect and quantify *Enterococcus* spp. with rapid Polymerase Chain Reaction (qPCR) (EPA Methods 1609 and 1611). These are not required standards but are optional methods of analysis which may be used by beach managers to potentially inform same-day decision making. In 2019, the Department initiated a pilot project to assess qPCR sampling and analysis implementation for

New York City beach surveillance and monitoring. The pilot continued in 2020, and the Department collected additional, paired samples from a selection of sites from July through September. These additional samples will be analyzed with qPCR method 1609, as well as Droplet Digital PCR (ddPCR) analysis with use of Bio Rad's QX 200 system), for comparison with the currently utilized EPA 1600 culture method. Analysis is ongoing and DOHMH intends to continue this project to advance sampling protocols and assess feasibility of implementation in future seasons.

2.2 Rainfall Events

Preemptive rainfall thresholds have been developed for New York City beaches through statistical modeling of historical precipitation and water quality data. These preemptive thresholds are used as a management tool to provide a quick and reliable indication of water quality conditions. Because the majority of the city has combined stormwater and sewer conveyance systems, high levels of precipitation may result in combined sewage and stormwater runoff bypassing the treatment system and overflowing into local waterbodies. This phenomenon, known as Combined Sewer Overflow (CSO), poses a public health threat to nearby beaches. When preemptive rainfall thresholds are met, as defined in Table 2, a public notification or warning takes effect for the predetermined duration.

TABLE 2: NEW YORK CITY PREEMPTIVE RAINFALL THRESHOLDS

Beach (Borough)	Rainfall Threshold (within 24 hrs)	Duration of Warning
South Beach, Midland Beach, Cedar Grove, Staten Island YMCA (Staten Island), Manhattan Beach, Kingsborough Community College (Brooklyn)	1.5 – 2.5 inches	12 hours
	> 2.5 inches	24 hours
Orchard Beach (Brooklyn)	> 2.5 inches	24 hours
Coney Island (Brooklyn)	> 2.5 inches	12 hours
Gerritsen/Kiddie Beach (Brooklyn) Whitestone Booster (Queens)	0.3 - 0.6 inches	18 hours
	> 0.6 inches	40 hours
American Turner, Danish American, Manhem, White Cross, Morris Yacht, Schuyler Hill, Trinity Danish, Locust Point Yacht Club, West Fordham Street Association (Bronx)	0.6 – 2.5 inches	36 hours
	> 2.5 inches	48 hours
Douglaston Manor (Queens)	0.3 – 0.6 inches	30 hours
	> 0.6 – 2.5 inches	60 hours
	> 2.5 inches	72 hours

2.3 Beach Classifications

There are three swimming classifications for New York City beaches which are determined by assessing water quality, rainfall and pollution events, on-site sanitary surveys, and/or historical information. Beaches, except those specifically restricted under Article §167.05, are classified as follows:

Class A: Open for Swimming and Wading. Beaches may be classified as open and approved for swimming and wading when *all* of the following conditions are met:

1. Beach water quality is in accordance with standards defined under Article §167.13;
2. Sanitary and safety surveys are satisfactory in accordance with Article §167.25; and
3. The epidemiological history is satisfactory to the Department, i.e., no repeated complaints or reports of illness/injury received from the public or from owners/operators of city beaches.

Class B: Warning – Not Recommended for Swimming and Wading. Beaches may be classified as "Not Recommended for Swimming and Wading," resulting in notifications to the public that swimming should be avoided to prevent contracting a swimming-related illness, when *one or more* of the following conditions exists:

1. Rainfall events exceed the preemptive rainfall thresholds; and/or
2. A water quality sample exceeds the water quality standard or a beach notification threshold. The notification should remain in effect until resampling indicates that the beach water quality standard and/or notification thresholds are being met; and/or
3. An on-site sanitary survey or investigation reveals the presence of floatable debris, medical/infectious waste or toxic contaminants, petroleum products and/or other contamination on the beach; or evidence of sewage and wastewater discharge.

Class C: Closed – Temporarily Restricted for Swimming and Wading: Beaches may be classified as "Temporarily Restricted for Swimming and Wading" when *one or more* of the following conditions exists:

1. Sampling by bacteriological testing that finds beach water quality exceeding the statutory water quality standard for marine water beaches; and/or
2. Epidemiological data indicates a significant incidence of related illnesses or repeated complaints/reports of illness/injury received from beach patrons; and/or
3. A sanitary and safety survey or an investigation reveals the presence of potentially hazardous amounts of floatable debris, medical/infectious waste, toxic contaminants, petroleum products or other contaminants on the beach, or there is evidence of sewage and wastewater discharges in sufficient quantities that will adversely affect the quality of the beach water; and/or

4. Any other environmental factors determined to be a public health or safety hazard by the Department are present.

2.4 Beach Monitoring and Surveillance

Starting one month before the beach season, the Department monitors and samples each beach on a weekly basis with the exception of the Rockaway and Breezy Point beaches, which are sampled biweekly. In addition to routine water quality monitoring, the Department monitors on a daily basis the regional wet weather conditions and occasional Waste Water Treatment Plant (WWTP) bypasses, operational upsets and spills through interagency communication and cooperation. This information can be used to assess and make beach status determinations.

During a sample event, a routine on-site sanitary survey inspection is performed to identify any existing and/or potential sources of pollution that are likely to affect beach water quality. Water samples are collected at knee depth (18 inches) in three feet of water, from the center, left and right of the beach. At larger beaches, such as Coney Island and Rockaway, samples are taken from multiple locations to ensure adequate representation and reliable results. The collected samples are delivered to the Department's Public Health Laboratory for analysis. The analytical turnaround time for enterococci is 24 hours.

The water quality of the samples analyzed is reviewed and assessed for conformance to applicable standards. If the regulatory limit for enterococci is exceeded or conditions exist that may pose a threat to the health and/or safety of the public, the Department initiates one of the following actions: conducts immediate re-sampling; issues a warning and conducts re-sampling; and/or closes the beach and conducts re-sampling. The determining factors for additional sampling may include: proximity to suspected pollution sources; extent of pollution; beach use; historical water quality data; and other health risk factors.

2.5 Public Notification and Risk Communication

When beach status changes based upon evaluation and assessment of beach water quality as specified above, the Department notifies the public through on-site beach signage, website postings, 311 non-emergency government service hotline, Notify NYC (via Twitter, RSS feed, e-mail, and SMS), "Know Before You Go" texting service, and Department press releases when necessary. Beach operators are notified by phone, email and/or text as to the necessary on-site postings. The specific notification procedures and requirements for each of the above conditions are as follows:

On-Site Signage: When notified by the Department, the permittee is required to post or remove the warning or closure signs in designated areas visible to beach users, such as beach entrances, bulletin boards, comfort stations or the general vicinity of the common swimming areas.

"Know Before You Go" Texting Service: Subscribers text "BEACH" to 877-877 to learn the beach status for any of the eight public beaches in New York City.

Website Postings: The Department has developed an easily accessible website with up-to-date information for all permitted beaches: www.nyc.gov/health/beach. The website contains background information on the beach program, explains the causes and sources of surface water pollution, and summarizes the beach classification system, including the different types of warnings. A list of city beaches by borough, along with their respective status (Open, Closed, or Warning) and sample results are promptly updated on the website.

Notify NYC: When notified by the Department of status changes relating to public beaches, the Office of Emergency Management will share this information with members of the public who have signed up for Notify NYC status information via Twitter, RSS feed, e-mail and SMS.

311: The 311 telephone operators monitor the Department's website for updates on warning or closure information, as described above, and convey that information to 311 callers. The public can also report a swimming-related illness via 311.

NYC Press Release: Press releases are disseminated to various types of media (newspaper, radio, website, television), as well as elected officials.

2.6 Inspections

The Department conducts annual safety inspections and complaint inspections at bathing beaches to assure that (1) all staff, especially lifeguards and supervisors, have proper certificates and coverage, including CPR certification; (2) all required life-saving equipment is available, including rescue tubes, spine boards, first aid kits, and resuscitation equipment; and (3) there is proper signage posted on site. Direct observations of conditions are supplemented by interviews with lifeguards and other personnel. The inspections also evaluate beach facility hygiene.

SECTION 3

FINDINGS

3.1 Water Quality and Illness Reporting

Routine water quality monitoring and sample collection was performed at all 25 permitted beaches. Over 300 samples were collected and analyzed from these beaches between April and September 2020. In 2020, the Department received two complaints in July regarding a potential illness caused by beach recreation activity at the Bronx private beach, Schuyler Hill Civic Association. These complaints were referred to the Bureau of Communicable Disease epidemiologists for follow-up investigation. After multiple attempts the complainants could not be contacted, and as a result, the exposure and/or cause could not be verified.

Due to the shortened bathing season and modified beach monitoring plan, DOHMH collected fewer total samples than during a normal beach season. A normal beach season would have run from May 25, 2020 to September 13, 2020, with some pre-season sampling occurring too. The shortened season ran from July 1, 2020 to September 7, 2020, with some variable and extended pre-season sampling occurring due to the uncertainty around COVID-19 timelines. Additionally, DOHMH reduced the frequency of sampling events at certain beaches from weekly to biweekly. Further, DOHMH reduced the number of sampling locations per beach sampling event, resulting in fewer samples collected per monitoring period. These changes were made due to COVID-19 staffing precautions and safety measures. In 2020 DOHMH collected roughly 300 samples, compared to over 1,000 samples in a normal beach season. Given the limitations of this beach season, DOHMH interpreted sample results conservatively, and in most cases did not initiate resampling events to use resample information to reduce notification periods.

Water quality sample results, including 30-day geometric mean and daily averages and any associated criteria exceedances can be found in Appendix A (pages 12 to 17). Warnings and closures issued by the Department throughout the season are summarized in Appendix B (pages 18 to 20).

In general, for private beaches, Douglaston Manor had the highest daily exceedance rate (22.2%), while most other private beaches had no exceedances. Among public beaches, South and Manhattan had the highest daily exceedance rates (6.3%), while most other public beaches had no exceedances.

3.2 Public Notification for Warnings and Closures

There are 8 public beaches, all of which were issued at least one swimming advisory warning notice during the 2020 bathing season. However, there were only two warnings issued as a result of water quality exceedances. Fourteen notification days were a result of preemptive wet weather or tropical storm conditions. The length of notification ranged from 1 to 2 days.

Of the 17 private beaches in NYC, 13 were open in 2020. Nine were issued at least one swimming advisory warning notice during the bathing season. Of the private beaches that exceeded water quality standards, there were 139 warning days, 72 of which were a result of a contamination advisory on Douglaston Manor beach only. The other 67 warning days were a result of wet weather conditions, where the length of the notifications ranged from 1 to 2 days. Appendix B can be found on pages 18 to 20.

Due to storm warnings from the National Weather Service, all eight public beaches were pre-emptively closed to swimming on Tuesday, August 4, ahead of the landfall of Tropical Storm Isaias. All public beaches were closed on September 7 (Labor Day) for the 2020 season.

3.3 Inspections

During the 2020 beach season, inspections of all open 21 public and private beaches were successfully conducted by the Department. One facility was cited for violations at the time of inspection (during a Coney Island inspection, minor disrepair of parts of the boardwalk was observed), as indicated in Appendix C.

APPENDIX A: 2020 WATER QUALITY RESULTS AND EXCEEDANCE

Table A1-1: Brooklyn Beaches Water Quality Results

Enterococci 30 Day Geometric Mean/Daily Average (Count/100ml)

Water Quality Standards: 30 day geomean limit: 35cfu/100ml, Daily average limit: 104cfu/100ml

Date of Week Ending	CONEY ISLAND BEACH (public)		MANHATTAN BEACH* (public)		GERRITSEN/ KIDDIE BEACH (private)		KINGSBOROUGH COMMUNITY COLLEGE (private)		SEA GATE 42ND (private)		SEA GATE BEACH CLUB (private)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/23/2020					40	40	4	4	4	4	4	4
5/30/2020					38	36	4	4	8	16	4	4
6/6/2020					36	32	4	4	6	4	4	4
6/13/2020	9	19	60	60								
6/20/2020	6	4	15	4								
6/27/2020	6	5	14	12								
7/4/2020	6	24	22	88	82	210	9	20	4	4	4	4
7/11/2020	7	13	16	4								
7/18/2020	7	7	11	12	29	4	18	16	4	4	4	4
*7/25/2020**	10	27	18	13								
8/1/2020	10	8	15	4	15	4	22	32	4	4	4	4
8/8/2020	11	24	14	52								
8/15/2020	9	5	14	4	4	4	28	24	4	4	4	4
8/22/2020	11	21	14	8								
8/29/2020	8	4	13	48	4	4	14	4	5	8	5	8
9/5/2020	8	8	19	36								

* mid-week sample result on 7/25/2020 at Manhattan Beach resulted in water quality concerns, see appendix B for description.

Values highlighted in red indicate exceedance of recreational water quality criteria.

Table A1-2: Bronx Beaches Water Quality Results

Enterococci 30 Day Geometric Mean/Daily Average (Count/100ml)

Water Quality Standards: 30 day geomean limit: 35cfu/100ml, Daily average limit: 104cfu/100ml

Date of Week Ending	ORCHARD BEACH (public)		AMERICAN TURNER (private)		DANISH AMERICAN BEACH CLUB (private)		LOCUST POINT YACHT CLUB (private)		MANHEM CLUB (private)		MORRIS YACHT AND BEACH CLUB (private)		SCHUYLER HILL CIVIC ASSOC. (private)		TRINITY DANISH (private)		WEST FORDHAM STREET ASSOC. (private)		WHITE CROSS FISHING CLUB (private)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/23/2020			4	4	4	4	4	4	4	4	4	4	4	4	4	4	8	8	4	4
5/30/2020			4	4	4	4	4	4	4	4	4	4	6	8	4	4	6	4	4	4
6/6/2020			5	8	5	8	5	8	10	60	7	24	5	4	4	4	5	4	6	12
6/13/2020	268	270																		
6/20/2020	47	15																		
6/27/2020	20	5																		
7/4/2020	16	15	19	44	13	20	6	4	15	4	10	4	10	24	6	8	8	16	17	24
7/11/2020	12	5																		
7/18/2020	7	4	13	4	9	4	4	4	7	12	4	4	10	4	6	4	8	4	14	8
7/25/2020	6	8																		
8/1/2020	5	4	23	72	7	4	4	4	6	4	4	4	7	4	6	8	6	4	9	4
8/8/2020	6	25																		
8/15/2020	6	4	10	4	4	4	5	8	6	4	4	4	5	8	6	8	4	4	6	8
8/22/2020	7	15																		
8/29/2020	6	4	10	4	7	20	7	12	4	4	4	4	5	4	6	4	4	4	5	4
9/5/2020	7	15																		
9/12/2020			4	4	9	8					4	4	5	4			4	4		

Values highlighted in red indicate exceedance of recreational water quality criteria.

Table A1-3: Queens Beaches Water Quality Results

Enterococci 30 Day Geometric Mean/Daily Average (Count/100ml)

Water Quality Standards- 30 day geomean limit: 35cfu/100ml, Daily Average limit: 104cfu/100ml

Date of Week Ending	ROCKAWAY BEACH (public)		BREEZY POINT 219 (private)		BREEZY POINT Reid Ave (private)		WHITESTONE BOOSTER CIVIC ASSOCIATION (private)		DOUGLASTON MANOR ASSOCIATION (private)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/23/2020			4	4	4	4	4	4	4	4
5/30/2020							4	4	4	4
6/6/2020			4	4	4	4	6	12	18	360
6/20/2020	5	5								
7/4/2020	6	20	4	4	4	4	14	16	216	130
7/18/2020	6	5	4	4	7	12	28	48	72	40
8/1/2020	5	4	4	4	6	4	33	48	75	80
8/15/2020	5	10	4	4	6	4	21	4	43	24
8/29/2020	5	4	5	8	4	4	33	200	57	96
9/12/2020									30	12

Values highlighted in red indicate exceedance of recreational water quality criteria.

Table A1-4: Staten Island Beaches Water Quality Results

Enterococci 30 Day Geometric Mean/Daily Average (Count/100ml)

Water Quality Standards- 30 day Geomean limit: 35cfu/100ml, Daily Average limit: 104cfu/100ml

Fresh Water Standards- 30 day Geomean limit: 33cfu/100ml, Daily Average limit: 61cfu/100ml

Date of Week Ending	SOUTH BEACH* (public)		MIDLAND BEACH (public)		CEDAR GROVE BEACH (public)		WOLFE'S POND BEACH (public)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
6/13/2020	4	4	12	12	12	12	4	4
6/20/2020	7	12	7	4	7	4	6	8
6/27/2020	6	4	6	4	6	4	5	4
7/4/2020	5	4	5	4	5	4	5	4
7/11/2020	5	4	6	8	5	4	5	4
7/18/2020	7	28	5	8	4	4	5	4
7/25/2020	7	8	6	8	5	8	5	12
8/1/2020	7	4	6	4	5	4	5	4
8/8/2020	9	20	8	12	6	16	5	4
8/15/2020	9	4	7	4	6	4	5	4
*8/22/2020**	15	19	7	16	9	32	6	8
8/29/2020	13	4	6	4	8	4	5	4
9/5/2020	13	4	7	8	8	4	6	16

* mid-week sample result on 8/22/2020 at South Beach resulted in water quality concerns, see appendix B for description.

Table A2-1: 2020 Summary of Beach Samples and Single-Sample Exceedances

Beach	Sample Location	Total # of Samples	# of Sample exceed 104	% of Sample exceed 104
ALL Beaches TOTAL		**312**	**8**	**2.6%**
Public Beaches TOTAL		**172**	**4**	**2.3%**
Private Beaches TOTAL		**140**	**4**	**2.9%**

Table A2-2: 2019 Public Beaches Samples and Single-Sample Exceedances

Beach	Sample Location		Total # of Samples	# of Sample exceed 104	% of Sample exceed 104 (Location)	% of Sample exceed 104 (Beach)
CEDAR GROVE	CEDAR GROVE	Center	13	0	0.0%	*0.0%*
CONEY ISLAND	CONEY ISLAND BR. 15TH - 6TH	Center	13	0	0.0%	*0.0%*
	CONEY ISLAND OCEAN PKWY - WEST 8TH	Center	13	0	0.0%	
	CONEY ISLAND WEST 28TH - WEST 37TH	Center	13	0	0.0%	
MANHATTAN BEACH	MANHATTAN BEACH	Left	1	0	0.0%	*6.3%*
	MANHATTAN BEACH	Center	14	1	7.1%	
	MANHATTAN BEACH	Right	1	0	0.0%	
MIDLAND BEACH	MIDLAND BEACH	Center	13	0	0.0%	*0.0%*
ORCHARD BEACH	ORCHARD BEACH	Left	13	1	7.7%	*5.3%*
	ORCHARD BEACH	Center	12	0	0.0%	
	ORCHARD BEACH	Right	13	1	7.7%	
ROCKAWAY BEACH	ROCKAWAY BEACH 9TH - 13TH	Center	3	0	0.0%	*0.0%*
	ROCKAWAY BEACH 15TH - 22TH	Center	3	0	0.0%	
	ROCKAWAY BEACH 23RD - 59TH	Center	3	0	0.0%	
	ROCKAWAY BEACH 59TH - 80TH	Center	3	0	0.0%	
	ROCKAWAY BEACH 80TH - 95TH	Center	3	0	0.0%	
	ROCKAWAY BEACH 95TH - 116TH	Center	3	0	0.0%	
	ROCKAWAY BEACH 116TH - 126TH	Center	3	0	0.0%	
	ROCKAWAY BEACH 126TH - 149TH	Center	3	0	0.0%	
SOUTH BEACH	SOUTH BEACH	Left	1	0	0.0%	*6.3%*
	SOUTH BEACH	Center	14	1	7.1%	
	SOUTH BEACH	Right	1	0	0.0%	
WOLFE'S POND BEACH	WOLFE'S POND BEACH	Center	13	0	0.0%	*0.0%*
Public Beaches (Locations) Total			**172**	**4**	**2.3%**	

Table A2-3: 2020 Private Beaches Samples and Single-Sample Exceedances

Beach	Sample Location		Total # of Samples	# of Sample exceed 104	% of Sample exceed 104 (Location)	% of Sample exceed 104 (Beach)
AMERICAN TURNER	AMERICAN TURNER	Center	9	0	0.0%	0.0%
BREEZY POINT 219	BREEZY POINT 219	Center	7	0	0.0%	0.0%
BREEZY POINT Reid	BREEZY POINT Reid Ave	Center	7	0	0.0%	0.0%
DANISH AMERICAN BEACH CLUB	DANISH AMERICAN BEACH CLUB	Center	9	0	0.0%	0.0%
DOUGLASTON MANOR ASSOCIATION	DOUGLASTON MANOR ASSOCIATION	Center	9	2	22.2%	22.2%
GERRITSEN/KIDDIE BEACH	GERRITSEN/KIDDIE BEACH	Center	8	1	12.5%	12.5%
KINGSBOROUGH COMMUNITY COLLEGE	KINGSBOROUGH COMMUNITY COLLEGE	Center	8	0	0.0%	0.0%
LOCUST POINT YACHT CLUB	LOCUST POINT YACHT CLUB	Center	8	0	0.0%	0.0%
MANHEM CLUB	MANHEM CLUB	Center	8	0	0.0%	0.0%
MORRIS YACHT AND BEACH CLUB	MORRIS YACHT AND BEACH CLUB	Center	9	0	0.0%	0.0%
SCHUYLER HILL CIVIC ASSOCIATION	SCHUYLER HILL CIVIC ASSOCIATION	Center	9	0	0.0%	0.0%
SEA GATE 42ND	SEA GATE 42ND	Center	8	0	0.0%	0.0%
SEA GATE BEACH CLUB	SEA GATE BEACH CLUB	Center	8	0	0.0%	0.0%
TRINITY DANISH	TRINITY DANISH	Center	8	0	0.0%	0.0%
WEST FORDHAM STREET ASSOCIATION	WEST FORDHAM STREET ASSOCIATION	Center	9	0	0.0%	0.0%
WHITE CROSS FISHING CLUB	WHITE CROSS FISHING CLUB	Center	8	0	0.0%	0.0%
WHITESTONE BOOSTER CIVIC ASSOCIATION	WHITESTONE BOOSTER CIVIC ASSOCIATION	Center	8	1	12.5%	12.5%
Private Beaches (Locations) Total			**140**	**4**	**2.9%**	

APPENDIX B: 2020 WARNINGS AND CLOSURES

Table B-1: Summary of Beach Warnings and Closure

Beach	Types	Reason	Start Date	End Date	Beach Open Days	# of Beach-Specific Days	Notification (Beach Specific Days)		
							Warning	Closure	Total
NYC ALL Beaches (N=21*)	Warning or Closure	Enterococci Exceedance or Rainfall Event	7/1/2020	9/13/2020	1172	155	147	8	155

*Four private beaches did not open for 2020 season.

Table B-2 Public Beaches Warnings and Closures

Beach	Types	Reason	Start Date	End Date	Beach Open Days	# of Beach-Specific Days	Notification (Beach Specific Days)		
							Warning	Closure	Total
CEDAR GROVE	Warning	Rainfall Event	7/11/2020	7/11/2020	67	1	1	1	2
	Closure	Tropical Storm	8/4/2020	8/4/2020		1			
CONEY ISLAND	Closure	Tropical Storm	8/4/2020	8/4/2020	68	1	0	1	1
MANHATTAN BEACH	Warning	Rainfall Event	7/11/2020	7/11/2020	65	2	3	1	4
	Warning	Enterococci Exceedance	7/22/2020	7/23/2020		1			
	Closure	Tropical Storm	8/4/2020	8/4/2020		2			
MIDLAND BEACH	Warning	Rainfall Event	7/11/2020	7/11/2020	67	1	1	1	2
	Closure	Tropical Storm	8/4/2020	8/4/2020		1			
ROCKAWAY BEACH	Closure	Tropical Storm	8/4/2020	8/4/2020	68	1	0	1	1
ORCHARD BEACH	Closure	Tropical Storm	8/4/2020	8/4/2020	68	1	0	1	1
SOUTH BEACH	Warning	Rainfall Event	7/11/2020	7/11/2020	65	1	3	1	4
	Closure	Tropical Storm	8/4/2020	8/4/2020		1			
	Warning	Enterococci Exceedance	8/19/2020	8/20/2020		2			
WOLFE'S POND PARK	Closure	Tropical Storm	8/4/2020	8/4/2020	68	1	0	1	1
Public Beaches TOTAL					536	16	8	8	16

Table B-3 Private Beaches Warnings and Closures

Beach	Types	Reason	Start Date	End Date	Beach Open Days	# of Beach-Specific Days	Notification (Beach Specific Days)		
							Warning	Closure	Total
AMERICAN TURNER		(not open)			0				
BREEZY POINT 219					69	0	0	0	0
BREEZY POINT REID					69	0	0	0	0
DANISH AMERICAN BEACH CLUB	Warning	Rainfall Event	7/11/2020	7/11/2020	65	1	10	0	10
	Warning	Rainfall Event	7/23/2020	7/23/2020		1			
	Warning	Rainfall Event	8/4/2020	8/5/2020		2			
	Warning	Rainfall Event	8/13/2020	8/13/2020		1			
	Warning	Rainfall Event	8/18/2020	8/19/2020		2			
	Warning	Rainfall Event	9/4/2020	9/5/2020		2			
	Warning	Rainfall Event	9/11/2020	9/11/2020		1			
DOUGLASTON MANOR ASSOCIATION	Warning	Enterococci Exceedance	7/1/2020	9/10/2020	1	72	74	0	74
	Warning	Rainfall Event	9/11/2020	9/12/2020		2			
GERRITSEN/	Warning	Rainfall Event	8/4/2020	8/4/2020	32	1	6	0	6
	Warning	Rainfall Event	8/8/2020	8/8/2020		1			
	Warning	Rainfall Event	8/12/2020	8/12/2020		1			
	Warning	Rainfall Event	8/19/2020	8/19/2020		1			
	Warning	Rainfall Event	8/28/2020	8/28/2020		1			
	Warning	Rainfall Event	9/4/2020	9/4/2020		1			
KINGSBOROUGH COMMUNITY COLLEGE		(not open)			0				
LOCUST POINT YACHT CLUB		(not open)			0				
MANHEM BEACH CLUB	Warning	Rainfall Event	8/4/2020	8/5/2020	34	2	7	0	7
	Warning	Rainfall Event	8/13/2020	8/13/2020		1			
	Warning	Rainfall Event	8/18/2020	8/19/2020		2			
	Warning	Rainfall Event	9/4/2020	9/5/2020		2			
MORRIS YACHT AND BEACH CLUB	Warning	Rainfall Event	7/11/2020	7/11/2020	65	1	10	0	10
	Warning	Rainfall Event	7/23/2020	7/23/2020		1			
	Warning	Rainfall Event	8/4/2020	8/5/2020		2			
	Warning	Rainfall Event	8/13/2020	8/13/2020		1			
	Warning	Rainfall Event	8/18/2020	8/19/2020		2			
	Warning	Rainfall Event	9/4/2020	9/5/2020		2			
	Warning	Rainfall Event	9/11/2020	9/11/2020		1			
SCHUYLER HILL CIVIC ASSOCIATION	Warning	Rainfall Event	8/4/2020	8/5/2020	36	2	8	0	8
	Warning	Rainfall Event	8/13/2020	8/13/2020		1			
	Warning	Rainfall Event	8/18/2020	8/19/2020		2			
	Warning	Rainfall Event	9/4/2020	9/5/2020		2			
	Warning	Rainfall Event	9/11/2020	9/11/2020		1			

Table B-3 Private Beaches Warnings and Closures (continued)

Beach	Types	Reason	Start Date	End Date	Beach Open Days	# of Beach-Specific Days	Notification (Beach Specific Days)		
							Warning	Closure	Total
SEAGATE 42nd					69	0	0	0	0
SEAGATE BEACH CLUB					69	0	0	0	0
TRINITY DANISH YOUNG PEOPLE'S SOCIETY	Warning	Rainfall Event	8/4/2020	8/5/2020	31	2	7	0	7
	Warning	Rainfall Event	8/13/2020	8/13/2020		1			
	Warning	Rainfall Event	8/18/2020	8/19/2020		2			
	Warning	Rainfall Event	9/4/2020	9/5/2020		2			
WEST FORDHAM STREET ASSOCIATION	Warning	Rainfall Event	7/11/2020	7/11/2020	65	1	10	0	10
	Warning	Rainfall Event	7/23/2020	7/23/2020		1			
	Warning	Rainfall Event	8/4/2020	8/5/2020		2			
	Warning	Rainfall Event	8/13/2020	8/13/2020		1			
	Warning	Rainfall Event	8/18/2020	8/19/2020		2			
	Warning	Rainfall Event	9/4/2020	9/5/2020		2			
	Warning	Rainfall Event	9/11/2020	9/11/2020		1			
WHITE CROSS FISHING CLUB	Warning	Rainfall Event	8/4/2020	8/5/2020	31	2	7	0	7
	Warning	Rainfall Event	8/13/2020	8/13/2020		1			
	Warning	Rainfall Event	8/18/2020	8/19/2020		2			
	Warning	Rainfall Event	9/4/2020	9/5/2020		2			
WHITESTONE BOOSTER CIVIC ASSOCIATION		(not open)			0				
Private Beaches TOTAL					**636**	**139**	**139**	**0**	**139**

APPENDIX C: 2020 INSPECTION SUMMARY

Table C-1: Inspection Non-Compliance Summary *

Beach Name	General Violations**
	167.09 (13)
CONEY ISLAND BEACH	√

* All other beaches were in full compliance of the regulations at the time of inspection.

** General Violations:

§167.09(13)	Any other condition determined to be a Public Health Hazard by the department (e.g. Boardwalk in disrepair).

Appendix 11:

- Appendix 11.1: Combined Sewer Overflow Annual Report Checklist
- Appendix 11.2: Table: Upcoming CSO milestones
- Appendix 11.3: Table: Reports to be submitted
- Appendix 11.4: CSO Discharges for CY2018 Checklist

Appendix 11.1: Combined Sewer Overflow Annual Report Checklist

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
COMBINED SEWER OVERFLOWS ANNUAL REPORT

PART I. GENERAL INSTRUCTIONS: The Combined Sewer Overflows (CSO) Annual Report is consistent with the EPA CSO Long-Term Control Policy requiring permitting authorities to report "Measures of Success" of the policy implementation. Hence, the goal of this report is to obtain information regarding:

1. Compliance with the 15 CSO Best Management Practices;
2. The condition and operation of the combine sewer system (CSS) components. Most importantly, the end-of-pipe measures that show trends in the discharge of CSS flows to the receiving water body, such as reduction of pollutant loadings, the frequency of CSOs, and the duration of CSOs;
3. Receiving water body measures that show trends of the conditions in the water body to which the CSO occurs;
4. Overall status of the CSO LTCP, if applicable;
5. Key CSO control accomplishments and design and construction progress in the previous year

Permittee must complete ALL parts of the form and must attach all supporting documents. Please be aware that this annual report form template highlights the minimum requirement a permittee is expected to submit. Permittee is obligated to complete abatement activities to ensure compliance with the Clean Water Act. This report is also consistent with NYS *6 NYCRR 750-2.1(i)*.

Special Instructions:

1. Multiple permittees (for instance NYC and Albany Pool) responsible to develop a single LTCP can submit one form and also complete Section D of this form.
2. **ALL SECTIONS OF THIS REPORT MUST BE COMPLETED.**

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

Part II - CSO LTCP Control Information

CSO Facility: NY-0026212: Spring Creek; NY-0026182: Paerdegat Basin; NY-0026239: Alley (	**Flow:**	**MGD**

SECTION A: CSO LTCP GENERAL INFORMATION

LTCP Development/Implementation:

Check all that apply:		*Describe other controls currently being used or planned. Also describe how the objectives of the CSO Control Policy have been met.*
In Development	☑	DEP has submitted ten (10) CSO LTCPs to date and nine (9) have been approved by the DEC including the Alley Creek, Bronx River, Coney Island Creek, Gowanus Canal, Hutchinson River, Flushing Bay, Flushing Creek, Newtown Creek, and Westchester Creek CSO LTCPs. The Jamaica Bay LTCP was submitted and the Citywide/Open Waters LTCP is due on May 30, 2020.
Submitted	☑	
Approved	☑	
In Progress	☑	
Completed	☑	
Not Required	☐	

CSO Controls:

Check all that apply:		*Describe other controls currently being used or planned. Also describe how the objectives of the CSO Control Policy have been met under the selected controls*
Source Controls	☑	Completed Projects (1995 - 2019): Four (4) CSO Storage Tanks (118 MG); Pumping Station Expansion (Ave V and Gowanus); Bronx River Nets and Screens; Sewer Improvements (26th Ward and Jamaica); Green Infrastructure; Gowanus Canal Flushing Tunnel; Environmental Dredging (Hendrix Creek and Paerdegat Basin); English Kills Instream Aeration; Bending Weirs Installations (Bergen Basin, Thurston Basin, and Newtown Creek), Flushing Bay Environmental Dredging; Flushing Bay Weir Modifications; and Wet Weather Improvements at Wards island; Phase 1 of Fresh Creek High Level Storm Sewers. Ongoing Projects: Phase 2 and 3 of Fresh Creek High Level Storm Sewers; Sewer Improvements in Jamaica; and Wet Weather Improvements at 26th Ward WWTPs. Planned Projects: Newtown Creek CSO Storage Tunnel and Borden Avenue Pump Station
Collection System Controls	☑	
Storage Technologies	☑	
Treatment Technologies	☑	
Floatable Controls	☑	
Disinfection	☑	
Type:		

Post-Construction Compliance Monitoring (PCCM) Program:

Check all that apply:		*Describe PCCM findings, status, updates, and future plan. Attach a separate sheet if necessary and describe if the PCCM confirms that LTCP is meeting the t objectives of the CSO Control Policy*
In Development	☑	DEP has been conducting PCCM is various water bodies including Alley Creek, Paerdegat Basin, Gowanus Canal, Flushing Bay, Flushing Creek, Spring Creek, Coney Island Creek, and Newtown Creek as required under it's previously approved Waterbody Watershed Facility Plans. PCCM has been completed in Flushing Bay, Flushing Creek, and Spring Creek. A targeted interim PCCM was also completed and approved for Newtown Creek and Coney Island Creek required for approval of CSO LTCP. Upon completion of proposed LTCP projects DEP will be conducting additional PCCM to assess efficacy of the LTCP recommended controls.
Submitted	☑	
Approved	☑	
In Progress	☑	
Completed	☑	
Not Required	☐	

Part II - CSO LTCP Control Information

SECTION B: OUTFALL INFORMATION

List all existing and active CSO the outfalls. Attach extra sheets, if necessary.

Outfall #	Latitude	Longitude	Receiving Water/Classification	# of Regulators Associated with this Outfall	Type of Regulator(s) Associated with this Outfall (Fixed Dam, Float / Dynamic, Elevated Pipe, Wet Well Overflow, etc.)
This	information	was	submitted to the NYSDEC under		separate cover

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT NO.: NY- see below

Part II - CSO LTCP Control Information

List all CSO the outfalls that have been closed or separated since LTCP development. Attach extra sheets, if necessary.

Outfall #	Latitude	Longitude	Receiving Water/Classification	Indicate Reason for Closure
This	information	was	submitted to NYSDEC under	separate cover

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT NO.: NY-see below

Part II - CSO LTCP Control Information

SECTION C: CSO EVENTS, DISCHARGE VOLUME, ETC. Provide an estimate or actual data on overflow events. If necessary, use a separate spreadsheet to report all CSO outfalls.

CSO Outfall #	No. of overflow events in the previous year		Total Annual CSO Volume Discharged (MG)		Total Annual Volume Captured or Diverted to POTW (MG)		# of CSO Outfalls		Indicate type of overflow measurements (e.g. metered, estimated, or modeled). *If other, please describe.*
	Baseline	Current	Baseline	Current	Baseline	Current	Baseline	Current	
See	attached	spreadsheet	that	has	been	provided	with	this	checklist

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT NO.: NY- see below PAGE | 2

Part II - CSO LTCP Control Information

CSO Outfall #	No. of overflow events in the previous year		Total Annual CSO Volume Discharged (MG)		Total Annual Volume Captured or Diverted to POTW (MG)		# of CSO Outfalls		Indicate type of overflow measurements (e.g. metered, estimated, or modeled). *If other, please describe.*
	Baseline	Current	Baseline	Current	Baseline	Current	Baseline	Current	
See	attached	spreadsheet	that	has	been	provided	with	this	Checklist
TOTAL									

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

Part II - CSO LTCP Control Information

SECTION D: Collection System Information

	Baseline	After CSO BMP and/or LTCP Implementation	Current
Percentage of the collection system owned by the permittee that is combined.		60%	60%
Approximate no. of miles of combined sewers in the permittee owned system		3,337	3,337
Number of combined sewer outfalls in the permittee owned system	404	408	408
Average annual no. of CSO events in the permittee owned system	38	TBD	25
Average annual CSO volume discharged from the permittee owned system (MG)	29,566	TBD	16,389
Population served by the permittee's owned system	8,000,000	TBD	8,600,000
Number of satellite system connections	N/A	N/A	N/A

Use the space below to provide any further relevant information on the collection system. This should include a description of any unique ownership, operation and maintenance agreements or further explanation and description of satellite system connections. (Attach extra sheets, if necessary):

(1) Baseline is taken from the 2007 Waterbody Watershed Facility Plans (WWFP) baseline conditions that was selected as the most appropriate pre CSO BMP Baseline Condition. The baseline condition uses projected 2040 sanitary flows at the time of the WWFP submittals, JFK 1988 annual precipitation data, and 2003 WWTP wet weather operating conditions.
(2) Percentage of system that is combined is based on the 2012 NYCDEP State of the Sewers Report.
(3) Current is based on the 2012 InfoWork Recalibration Report and other refinements made to the InfoWork models as part of the LTCP development in conjunction with 2019 sanitary flows, precipitation data, and WWTP wet weather operations.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT NO.: NY- see below

Part II - CSO LTCP Control Information

SECTION F: Use this section to describe how the implementation of the LTCP development and implementation have met the water quality standards of the receiving stream(s) and also objectives of the EPA CSO Control Policy (attach extra sheets as necessary):

DEP has been completed PCCM program in two (2) waterbodies including Spring Creek and Flushing Creek and have been conducting PCCM sampling in five (5) other water bodies including Alley Creek, Paerdegat Basin, Gowanus Canal, Newtown Creek, and Coney Island Creek. The data has been consistent with previous modeling projections and two of these waterbodies (Paerdegat Basin and Spring Creek) have been attaining primary contact criteria for bacteria. DEP also conducts an extensive Harbor Monitoring Program and the Open Waters including vast majority of East River, Hudson River, Harlem River, Inner and Outer Bay, and Jamaica Bay are attaining primary contact standards.

DEP has also submitted eleven (11) CSO LTCPs in accordance with EPA CSO Policy and nine (9) of these LTCPs have been approved. Upon implementation of these additional controls DEP anticipates further improvements in the tributaries and embayments but will likely not be able to fully attain primary contact standards in all waterbodies due to man-made alterations and poor circulation.

SECTION G: Use the following space to summarize other planned CSO control projects (attach extra sheets as necessary):

CY2020 Milestone:
Construction Completion for the Westchester Creek Modifications to CSO-29 and CSO-29A
Submit the Open Waters and East River CSO LTCP
Pugsley Creek Parallel Sewer
New Bergen Basin Sanitary Sewer

Upcoming CSO Milestones for CY2021 and CY2022:
Completion of 26th Ward - Fresh Creek High Level Storm Sewers
Construction Completion of 26W WRRF Wet Weather Enhancements
Flushing Bay CSO Storage Tunnel Design Initiation
Borden Ave Pump Station Expansion Design Initiation
Alley Creek TI-025 Disinfection Design Completion

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Keith Mahoney, PE	**Official Title:** Director, WIP&M	**Phone:** 718-595-5972
Signature: Keith Mahoney	**Date Signed:** 04/30/2021	**Email:** Kmahoney@dep.nyc.gov

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

Check N/A if not required in the permit, consent order, or LTCP:

1. **CSO Maintenance/Inspection** *6 NYCRR 750-2.8(a)(2) (EPA NMC: Proper Operation and Maintenance)*	YES	NO	N/A
Is there a written program for the operation, inspection and maintenance of the CSS?	✓		
Does the program include procedures for ALL outfalls in the permit?	✓		
Does the program include procedures for ALL regulators in the permit?	✓		
Are inspections conducted at least as frequently as required in the permit (weekly or monthly)?	✓		
Are inspections conducted during dry and wet weather?	✓		
Do the inspection reports indicate visual inspection, any observed flows, incidence of rain or snowmelt, condition of equipment, and any work required?	✓		
Are inspection reports submitted to the DEC regional office with the monthly operating reports?		✓	
Is the written program sufficiently detailed? Indicate which of the following additional components are included in the plan.	✓		
Pump Stations	✓		
Sewer cleaning			✓
Sewer Manholes and Catch Basins			✓
Outfalls			✓
CSO Controls			✓
Are there inter-municipal agreements which require inspection and maintenance?			✓
Are any changes planned in the upcoming year for the agreements to make them more effective?			✓
Is the collection system mapped using GIS?	✓		
Entire system, including manholes and catch basins?			✓
In the past year, was significant mapping progress accomplished?			✓
In the upcoming year, is GIS mapping planned?	✓		
Is the collection system monitored using a SCADA system?	✓		
In the past year, was significant progress accomplished in installing or expanding monitoring with a SCADA system?			✓
In the upcoming year, is installation of a SCADA system planned or being expanded?			✓
Does the municipality have an asset management plan that includes the collection system?			✓
Are funds available to carry out the BMP requirements?			✓
Are any major equipment purchases planned or expected in the next five years related to the BMP requirements? If yes, describe below			✓
Is the pump inventory, including spare parts, adequate for the upcoming year?			✓
Is sufficient staff training available?			✓

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT NO.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

	YES	NO	N/A
Is funding for training adequate and available?	☐	☐	☑
Is sufficient staff training available?	☐	☐	☑
Is funding for training adequate and available?	☐	☐	☑
Have any work efforts or problems in the past year resulted in changes in overflows? If yes, describe below	☐	☑	
Fewer events	☐	☐	
Less volume	☐	☐	
Reduction in floatables, settleable solids or oil and grease discharged	☐	☐	
Reduction in industrial pollutants (chemicals)	☐	☐	
Improvement in water quality of receiving waterbody	☐	☐	
In the past year, was the inspection and maintenance program mostly:			
Reactive (responding to problems)	☐	☑	☐
Proactive (focusing on preventative maintenance to avoid problems)?	☑	☐	☐
If the program is mostly reactive, describe below any plans to shift the emphasis to prevention	☐	☐	☑

DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)

Completed Projects (1995 - 2019): Four (4) CSO Storage Tanks (118 MG); Pumping Station Expansion (Ave V and Gowanus); Bronx River Nets and Screens; Sewer Improvements (26th Ward and Jamaica); Green Infrastructure; Gowanus Canal Flushing Tunnel; Environmental Dredging (Hendrix Creek and Paerdegat Basin); English Kills Instream Aeration; Bending Weirs Installations (Bergen Basin, Thurston Basin, and Newtown Creek), Flushing Bay Environmental Dredging; Flushing Bay Weir Modifications; and Wet Weather Improvements at Wards island; Phase 1 of Fresh Creek High Level Storm Sewers.

Ongoing Projects: Phase 2 and 3 of Fresh Creek High Level Storm Sewers; Sewer Improvements in Jamaica; and Wet Weather Improvements at 26th Ward WWTPs.

Planned Projects: Newtown Creek CSO Storage Tunnel and Borden Avenue Pump Station Expansion; Flushing Bay CSO Storage Tunnel; Disinfection/Floatables at Alley Creek and Flushing Creek; New Outfall and Disinfection at Hutchinson River; Sewer and Regulator Improvements in Bronx River; Flushing Bay CSO Storage Tunnel.

See CSO BMP Report for more details.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

2. Maximum Use of Collection System for Storage *6 NYCRR 750-2.7(f), 750-2.8(a)(2), 750-2.8(a)(5) (EPA NMC: Maximum Use of Collection System for Storage)*	**Yes**	**No**	**N/A**
Are CSOs minimized, and flow to the treatment plant maximized?	✓		
Has the hydraulic capacity of the system been evaluated?	✓		
Is there a continuous program of flushing and cleaning to prevent deposition of solids?	✓		
Have regulators and weirs been adjusted to maximize storage without causing service backups?	✓		
In the past year or the upcoming year, have any changes to structures or procedures been made or planned that will improve use of the collection system for storage? Describe below	✓		
Tidegates maintenance/repairs/replacement		✓	
FOG program		✓	
Removal of small systems bottlenecks			✓
Sewer cleaning and sediment removal		✓	
Removal of flow obstructions			✓
Regulator or weir adjustment - list locations below	✓		
In-line storage: Inflatable dams or sluice gates			✓
Wet Weather Operating Plan	✓		
Do the municipalities within the combined sewer system have a water conservation program for homeowners?	✓		
In the upcoming year are there any studies, work, or projects planned (other than routine activities) to improve use of collection system for storage? Describe below.			✓

DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)

Work has recently been completed in Newtown Creek and Bergen/Thurston Basin to install 7 bending weirs to convey more wet weather flow to the WWTPs. Weir modifications were also made tin the Flushing Bay High Level to maximize conveyance and storage in the collection system. Sewer improvement and regulator modification projects are also underway in Westchester Creek, Jamaica Bay and Tributaries, and planned Bronx River that will also maximize storage and enable more wet weather flow to be conveyed to the treatment plants.

See CSO BMP Report for more details.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

3. Industrial Pretreatment *6 NYCRR 750-2.7(f) and 2.9(a)(4)* *(EPA NMC: Review and Modify Pretreatment Requirements)* ☐ N/A	YES	NO	N/A
Has the impact on CSOs from nondomestic users that discharge toxic pollutants been evaluated, and steps taken to minimize such impacts?	✓		
Is there an approved pretreatment or mini-pretreatment program?	✓		
If there is no pretreatment or min-pretreatment program, are there any nondomestic users? If No to both of the previous questions, go to BMP 4			
Is there an inventory of industrial dischargers? Is the following information included?	✓		
Volume of discharge?	✓		
Pollutants in discharge?	✓		
Are any pollutants classified as "persistent toxics" or bioaccumulative?	✓		
Is the location included on the collection system map?			✓
Are there any industrial discharges that could reach CSO outfalls?	✓		
If yes, have any industrial dischargers been identified as contributing to a water quality impairment?		✓	
If yes, does the industry have a holding tank or EQ tank to store wastewater prior to discharge to the collection system?			✓
If yes, does the industry have a written plan to store or hold discharges during rain events?			✓
If yes, has the industry been asked to prepare a written plan to store or hold discharges?			✓
In the past year, have there been negotiations or changes to agreements with industrial dischargers which will potentially reduce impacts during CSO events? Describe below.		✓	
In the upcoming year, are any negotiations or changes to agreements with industrial dischargers planned which will potentially reduce impacts during CSO events? Describe below.		✓	

DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)

See CSO BMP Report for details.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

4. Maximize Flow to POTW *6 NYCRR 750-2.7(f), 2.8(a)(2), and 2.8(a)(5)* *(EPA NMC: Maximum Flow to POTW for Treatment)* **N/A** ☐	**YES**	**NO**	**N/A**
In the past year, were the headworks, primary treatment works and disinfection works able to pass the flows specified in the permit for all wet weather flows?	☐	☑	☐
In the past year, was the secondary treatment works able to treat the flows specified in the permit for all wet weather flows?	☐	☑	☐
If the answer to either of the above questions was No, has a plan and schedule to accomplish this been submitted to the Department?	☑	☐	☐
In the past year have there been any physical modifications to the collection system which have allowed more flow to reach the POTW? Describe below.	☑	☐	☐
Are any physical modifications planned for the upcoming year?	☑	☐	☐
Are there areas of the collection system, including pump stations that need additional study to evaluate capacity, condition, or to determine if illegal connections (i.e. inflow) exist? List below	☑	☐	☐
In the past year, have any new problem areas been identified that restrict flow to the plant? List locations below	☐	☑	☐
In the upcoming year, are there plans to address hydraulic restrictions or bottlenecks?	☐	☐	☑
Pipe replacement	☐	☐	☑
Construction of relief sewer	☑	☐	☐
Construction of overflow tank	☐	☑	☐
Pump station improvements	☐	☐	☑
Pump replacement	☐	☐	☑
Weir adjustment	☑	☐	☐
Smoke testing, dye testing to identify illicit connections	☐	☑	☐
Other:	☐	☐	☑

DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)

Work has recently been completed in Newtown Creek and Bergen/Thurston Basin to install 7 bending weirs to convey more wet weather flow to the WWTPs. Weir modifications were also made tin the Flushing Bay High Level to maximize conveyance and storage in the collection system. Sewer improvement and regulator modification projects are also underway in Westchester Creek, Jamaica Bay and Tributaries, and planned Bronx River that will also enable more wet weather flow to be conveyed to the treatment plants. DEP also expanded capacity of certain pump stations as part of the CSO Program including Gowanus Canal and Avenue V; and will be expanding the capacity of the Borden Avenue Pump Station as part of the approved Newtown Creek CSO LTCP.

DEP also performs routine upgrades to it's pipes and pump stations but these aren't linked to any bottlenecks, just state of good repair.

See CSO BMP Report for more details.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

5. Wet Weather Operating Plan (WWOP) *6 NYCRR 750-2.8(a) (EPA NMC: None)* ☐ **N/A**	**YES**	**NO**	**N/A**
Has a WWOP been developed, specifying procedures for unit operations, to maximize treatment during wet weather events while not diminishing effluent quality or destabilizing treatment upon return to dry weather operation?	✓		
In the past year, did treatment of wet weather flows cause any effluent violations or destabilize treatment upon return to normal service?	✓		
Has the WWOP been developed in accordance with the DEC guidance, "Wet Weather Operating Practices for POTWs with Combined Sewers"? If no, describe changes needed.	✓		
Has the WWOP been submitted to the Regional Office and Bureau of Water Permits (Albany) for review and approval?	✓		
If the collection system or plant has been modified or upgraded, has the WWOP been modified to reflect new flow rates or new procedures?	✓		
If yes, has the revised plan been submitted to the Regional Office for approval?	✓		
Does the plan identify the maximum flows through preliminary, primary, secondary treatment, tertiary, and disinfection units?	✓		
In the upcoming year, are changes to the plan expected?		✓	

DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)

See CSO BMP Report for details.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

6. Prohibition of Dry Weather Overflows *6 NYCRR 750-2.7 and 2.8(b)(2)* *(EPA NMC: Eliminate Dry Weather Overflows)* ☐ **N/A**	**YES**	**NO**	**N/A**
In the past year, were there any dry weather overflows? If no, skip to BMP 7.	✓		
Were all dry weather overflows reported in accordance with 6 NYCRR Part 750-2.7 (incident reporting)?	✓		
If dry weather overflows occurred, indicate which procedures or equipment have been improved or replaced			
Schedule for routine inspections		✓	
Management, operation and maintenance program			✓
Modification of existing or issuance of new inter-municipal agreements			✓
FOG program		✓	
Removal of illicit connections		✓	
I/I Control program		✓	
Leaky tidegates		✓	
Adjustment and/or repair of regulators		✓	
Pumps		✓	
Auxiliary power		✓	
Elimination of hydraulic bottlenecks			✓
Adequate dry weather flow capacity at the treatment plant		✓	
Other, list below			✓
Has additional staff training been provided?			✓
Has the likelihood of future dry weather overflows been eliminated? If not, describe additional information below.		✓	

DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)

See CSO BMP Report narrative for details.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

7. Control of Floatables and Settleable Solids *6 NYCRR 750-2.8(a)(4)* *(EPA NMC: Control of Solid and Floatable Materials in CSOs)* ☐ N/A	YES	NO	N/A
In the past year, were did any outfalls discharge floating solids, oil and grease, or solids of sewage origin?	✓		
Have BMPs been implemented to eliminate or minimize the discharge of floatables and settleable solids?	✓		
Have any of the following measures been implemented (either existing from previous years, in the past year) or will any be implemented in the upcoming year? If significant progress has been made in implementing these, or if significant improvements have occurred, describe below.	✓		
Floatables quantification	✓		
Booming and skimming of open waters	✓		
Source controls (street cleaning, public education, household hazardous waste collection, solid waste collection, recycling, and/or composting of lawn/leaf/roadkill deer)	✓		
In-line netting	✓		
Screens	✓		
Catch basin hoods	✓		
Other:			✓
Are any changes needed or planned for the upcoming year? Describe additional information below.		✓	

DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)

See CSO BMP Report narrative for details.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

8. **Combined Sewer System Replacement** *6 NYCRR 750-2.10(i) (EPA NMC: None)* ☐ **N/A**	YES	NO	N/A
In the past year, were any combined sewers designed or constructed that were not approved by DEC?	☐	☑	☐
If yes, was the combined sewer replaced by separate sanitary and storm sewers to the greatest extent possible?	☐	☐	☑
If yes, were the separate sanitary and storm sewers designed and constructed simultaneously but without interconnections to the maximum extent practicable?	☐	☐	☑
Is the combined portion of the collection system completely identified on maps or GIS?	☑	☐	☐
Are there any plans or current projects to separate combined sewers into sanitary and storm sewers?	☑	☐	☐
Is there an approved engineering plan for this project?	☑	☐	☐
In the past year, how many areas of combined sewer were separated? acres			
In the upcoming year, how many areas of combined sewer are scheduled to be separated? acres			
Are the sewer replacement projects on schedule? If no, describe below.	☐	☐	☑
Overall, has the implementation of this BMP resulted in fewer overflow events and/or less volume discharged? Describe below.	☐	☐	☑

DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)

TThere are many ongoing sewer separation projects that are ongoing throughout NYC and these are long term projects to improve drainage in certain areas and not typically done for CSO reductions with the exception of a high level storm sewer project underway in the 26th Ward WWTP drainage area.

See CSO BMP Report for more details.

PERMITTEE NAME: _____ SPDES PERMIT NO.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

9. **Combined Sewer Extension** *6 NYCRR 750-2.10(i) (EPA NMC: None)* ☐ **N/A**	YES	NO	N/A
In the past year, were any combined sewers extended not using separate sewers?	✓		
Were sanitary and storm sewers extensions designed and constructed simultaneously but without interconnections?		✓	
Were any new sources of stormwater added to a separate sewer anywhere in the collection system?		✓	
If separate sewers were extended from combined sewers, was it demonstrated that the sewerage system had the ability to convey, and the treatment plant had the ability to adequately treat, the increased dry-weather flows?	✓		
If determined necessary by the Regional Water Engineer, was an assessment made of the effects of the increased flow of sanitary sewage or industrial waste on the strength of CSOs and their frequency of occurrence, including the impacts upon best usage of the receiving water?			✓
Has a recent combined sewer extension resulted in increased discharge from a CSO?		✓	
Has a recent combined sewer extension resulted in increased flow to the POTW? Describe any CSO impacts below.		✓	
Is any development planned upstream of a combined sewer?	✓		
If yes, has a sewer extension plan been submitted for review and approval?			✓
If the approval contained a flow credit requiring removal of I/I, what was the requirement or ratio?			✓
Does the plan include any flow retention structures?			✓

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See CSO BMP Report for more details.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

10. **Connection Prohibitions** *6 NYCRR750-2.9(a)(5) (EPA NMC: None)* ☐ **N/A**	**YES**	**NO**	**N/A**
In the past year, were any sewer connections approved, in spite of a notice from DEC to prohibit further connections due to documented, recurrent instances of sewage backing up into house(s) or discharges of raw sewage onto the ground surface from surcharging manholes?	☐	☐	✓
Are new connections prohibited by the DEC? If no, skip to BMP 11.	☐	✓	☐
Is this due to basement backups?	☐	☐	✓
Is this due to surcharging manholes?	☐	☐	✓
In the upcoming year, is any work planned to either increase capacity or reduce hydraulic loading? Describe below.	☐	☐	✓

DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)

See CSO BMP Report for more details.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

11. **Septage and Hauled Waste** *6 NYCRR750-2.7(f) and 2.8(a)(1) (EPA NMC: None)* ☐ **N/A**	**YES**	**NO**	**N/A**
In the past year, has there been any discharge or release of septage or hauled waste into the collection system upstream of a CSO?	☐	☑	☐
Does the facility have authorization from DEC to accept hauled waste or septage at a location other than the POTW? Describe below.	☐	☑	☐
Are any of these locations upstream of a CSO?	☐	☐	☑
Are there any agreements with haulers to accept waste at a location other than at the POTW?	☐	☐	☑
In the past year, was any hauled waste or septage accepted at a location other than at the POTW?	☐	☐	☑
What was the total volume received at locations other than the POTW?	☐	☐	☑
Is there a dedicated location to discharge septage at the POTW?	☑	☐	☐
Are there restrictions on when the plant accepts hauled waste or septage?	☑	☐	☐
Have there been any changes to the POTW's policy on septage and hauled waste in the past year? Are any changes needed or planned in the upcoming year?	☐	☑	☐

DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)

See CSO BMP Report for details.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

12. **Control of Run-off** *6 NYCRR750- 2.1(e) (EPA NMC: None)* ☐ **N/A**	YES	NO	N/A
Is sediment in runoff from construction zones entering catch basins in the combined sewer system?	☐	☐	✓
Is there adequate communication between the local municipal department that enforces local stormwater codes and ordinances and the collection system staff regarding stormwater runoff?	☐	☐	✓
Do the municipalities within the combined sewer system have adequate storm water pollution prevention programs to reduce pollutants in stormwater?	☐	☐	✓
Annual household hazardous waste collection	✓	☐	☐
Autumn leaf collection	✓	☐	☐
Lawn clippings	✓	☐	☐
Christmas tree pickup	✓	☐	☐
Roadkill deer composting	☐	☐	✓
Fertilizer and pesticide management	☐	☐	✓
Enforcement of litter laws	✓	☐	☐
Public education programs on composting	✓	☐	☐
Are any changes needed in the implementation of this BMP to reduce the number of CSO events, the volume discharged, or pollutants in the discharge? If yes, describe below.	☐	✓	☐

DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)

See CSO BMP Report for details.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

13. **Public Notification** *6 NYCRR 750-1.12 (EPA NMC: Public Notification)* ☐ **N/A**	YES	NO	N/A
Have identification signs been installed and maintained at all CSO outfalls owned and operated by the permittee?	✓		
Are all signs placed at or near the outfall?	✓		
Are the signs easily readable by the public?	✓		
Are the signs a minimum size of 18" by 24"?	✓		
Do the signs have white letters on a green background?	✓		
Do all the signs contain the following information:			
SPDES permit number	✓		
Outfall number	✓		
Permittee name, contact name and phone number at business office or NYSDEC Division of Water regional contact address and phone number	✓		
For waters that are Class B or higher, is a public notification program implemented to inform citizens of the location and occurrence of CSO events?	✓		
Does this program include a mechanism (public media broadcast, standing beach advisories, newspaper notice, etc) to alert potential users of the receiving waters affected by CSOs?	✓		
Does this program include a system to determine the nature and duration of conditions that are potentially harmful to users of these receiving waters due to CSOs?	✓		
Were there any problems in the past year with missing or damaged signs? Describe below.	✓		
Is there a written public notification plan?	✓		
Does the plan list all methods used to notify the public of CSO events?	✓		
Does the plan list outfalls where signs are posted?	✓		

DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)

See CSO BMP Report for details.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

14. **Characterization and Monitoring** *(6 NYCRR 750-1.11(a), 2.5(a) and 2.7(g)) (EPA NMC: Monitoring)*	YES	NO	N/A
If required in the permit, has the combined sewer system been characterized to determine the frequency of overflows, and identify CSO impacts?	☐	☐	☑
Was a baseline sampling program established as part of the LTCP development?	☑	☐	☐
Are all outfalls monitored during discharge events for:	☐	☐	☐
Flow Volume:	☐	☑	☐
Frequency:	☐	☑	☐
Duration:	☐	☑	☐
If all outfalls are not monitored, explain how sufficient data is obtained to document the success of the BMPs.	☐	☐	☑
List locations of rain gauges or the source of data, below.	☐	☐	☑
Has a Post Construction Modeling and Monitoring plan been submitted to the Department for review and approval?	☑	☐	☐
Has the Department approved the Post Construction Modeling and Monitoring plan?	☑	☐	☐
Has post construction monitoring and modeling of the receiving water begun? Attach results if this has not already been provided.	☑	☐	☐

DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)

DEP has too many regulator structures with very complex geometry and that are tidally influenced that make it not viable to monitor all CSO outfalls. However, DEP does have a SCADA system that helps provide some information pertaining to water levels in the regulator structures that provide some indication on whether on not a CSO is occurring but its not a direct flow measurement and is influenced by other factors such as tidal elevations. DEP has also conducted some very comprehensive and intense interim flow monitoring using specialized vendors at a number of representative locations to calibrate and validate the InfoWork models. These calibrated InfoWork models are then used to estimate this CSO annual volume and frequency for all the CSO outfalls.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

15. **Annual report** *6 NYCRR 750-2.1(i)* ☐ **N/A** *(EPA NMC: None; Required in LTCP permit)*	YES	NO	N/A
Is this report being used to satisfy BMP 15, Annual report, and the BMP checklist?	✓		
Is existing documentation of implementation of the BMPs included?	✓		
Is this annual report submitted by January 31 to the Regional Office and the Bureau of Water Permits (Albany)?			✓
Attach any additional information necessary to document the implementation of BMPs in the past year or list plans for the upcoming year.	✓		
Overall, was implementation of the BMPs effective in controlling and minimizing CSO discharges?	✓		
If no, list any improvements needed that have not been described elsewhere			✓

See CSO BMP Report for details.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

ADDITIONAL INFORMATION:

DESCRIBE BELOW IN DETAIL OTHER "MEASURE OF SUCCESS" ABOVE AND BEYOND THE REQUIREMENTS OF THE SPDES PERMIT. DESCRIBE HOW ADDITIONAL PROJECT(S) HAS HELPED TO MEET THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS POLICY. (Attach extra sheet if necessary)

PERMITTEE NAME: _____ SPDES PERMIT NO.: NY- _____

PART III - CSO BEST MANAGEMENT PRACTICES

SECTION D: For Multiple Permittees Only

Permittee Name	SPDES Permit Name	SPDES Permit No

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

SECTION E: GLOSSARY/ACCRONYMS

For the purposes of this annual report, the following terms and acronyms are described below:

Baseline: Conditions before the development and/or implementation of CSO BMPs and/or LTCP.

Best Management Practice (BMP): Permit condition used in place of or in conjunction with effluent limitations to prevent or control the discharge of pollutants. May include schedule of activities, prohibition of practices, maintenance procedure, or other management practice. BMPs may include, but are not limited to, treatment requirements, operating procedures, or practices to control plant site runoff, spillage, leaks, sludge or waste disposal, or drainage from raw material storage.

Bypass: A discharge of wastewater, stormwater, or combination of both, around a treatment unit designed for the removal of pollutants.

Catch Basin: A chamber usually built at the curbline of a street, which admits surface water for discharge into a storm drain

Collection System: A wastewater collection system which conveys sanitary wastewaters (domestic, commercial and industrial wastewaters) and stormwater through a single pipe to a publicly owned treatment works for treatment prior to discharge to surface waters.

Combined Sewer: A sewer designed to carry wastewater and stormwater runoff.

Combined Sewer Overflows (CSO): A discharge of untreated wastewater from a combined sewer system at a point prior to the headworks of a publicly owned treatment works. CSOs generally occur during wet weather (rainfall or snowmelt). During periods of wet weather, these systems become overloaded, bypass treatment works, and discharge directly to receiving waters.

Combined Sewer System (CSS): A wastewater collection system that conveys sanitary wastewaters and storm water through a single pipe to a publicly owned treatment works for treatment prior to discharge to surface waters.

Demonstrative Regulatory Approach: Control approach where a permittee develops and implement an LTCP that meets the state water quality standards. A permittee could develop an LTCP that would provide for attainment of water quality standards, or it could use a total maximum daily load (TMDL) to *demonstrate* that water quality standards can be attained through a combination of CSO controls and other controls.

EPA: Environmental Protection Agency

EQ Tank: Equalization Tank often used to smooth hydraulic peaks to a POTW or WWTP.

Fats Oil & Grease (FOG)

Geographic Information System (GIS) is a computer-based tool for mapping and analyzing features in the environment. GIS support a wide range of activities including water quality modeling, watershed planning, and wetlands permitting and mitigation.

GI: Green" Infrastructure

Infiltration/Inflow (I/I): Rainwater, snowmelt, or groundwater flowing into separate sanitary or combined sewers, typically introduced via connected roof downspouts and/or building footing drains or infiltrating into the pipe through cracks in the pipe walls or joints.

This Period: Period covering the last 12 months from January to December

Last Period: Activities covering the 12 calendar months prior to the end of the current period

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

Long Term Control Plan (LTCP): An engineering document that characterizes and assesses CSO discharge to a receiving waterbody. The goal of the Plan is to comply with the water quality standards of the receiving waterbody.

Million Gallons per Day (MGD) is a unit of flow commonly used for wastewater discharges. One mgd is equivalent to 1.547 cubic feet per second.

Multiple Permittees here is described as when a group of permittees (e.g. Albany Pool) is responsible to develop a single LTCP or when a single LTCP is required for multiple SPDES permit under a single permittee (e.g. NYC).

Nine Minimum Controls (NMC) provide information on nine minimum technology-based controls that permittees are expected to use to address CSO problems, without extensive engineering studies or significant construction costs, before long-term measures are taken.

NYSDEC: New State Department of Environmental Conservation (interchangeably uses as DEC)

Publicly Owned Treatment Works (POTW): Also commonly referred to as "treatment facility, WWTP (Wastewater Treatment Plant)

SPDES Permit: State Pollutant Discharge Elimination System Permit. A permit issued by DEC, authorized under the federal Clean Water Act, to discharge treated wastewater to waters of the United States.

Overflow Events: An event starts once an overflow starts from an outfall, and ends once the overflow stops and the pumpback to treatment facility have ended.

Presumptive Approach: The presumption approach is based on the assumption that an LTCP that meets certain minimum defined performance criteria. The "presumption approach," under which achievement of certain performance criteria (i.e., 4-6 untreated overflow events or 85 percent by volume capture) would be presumed to provide an adequate level of control to attain water quality standards

Raw Sewage: Untreated sanitary sewage.

Sanitary Sewer Overflow (SSO) is an untreated or partially treated sewage discharge from the sanitary sewer collection system.

Separate Sewer (SS): A pipe or conduit intended to convey only sanitary sewage to a wastewater treatment facility.

SPDES: State Pollutant Discharge Elimination System

Sewer System: A public or privately owned wastewater collection facility designed and used to convey or treat sanitary sewage or sanitary sewage and storm water. Sewer system does not include an on-site wastewater treatment system serving one residential unit or duplex.

Supervisory Control and Data Acquisition (SCADA) is a complex computer system that provides automatic control of stormwater storage and overflows at various locations within the sewer system.

Volume Discharged: Total discharge volume for the event (in millions of gallons) from each CSO outfall within this reporting period.

Volume Captured: Total discharge volume for the event (in millions of gallons) that were either captured via an offline treatment facility before discharge or diverted to the WWTP for treatment.

WWOP: Wet Weather Operating Plan

Water Quality Standards (WQS) are regulations that establish the uses for which surface waters of the state are protected and include numeric and narrative criteria to protect those uses.

Appendix 11.2: TABLE - UPCOMING CSO MILESTONES

	Milestone	Item	Action	Projected Completion	Status
1	Jan 2016	**JB:** Primary Settling Tank Work	Construction NTP	Jan 2016	Certified by DEP 1/27/2016
2	Feb 2016	Early Tippers Report	Submit Report	Feb 2016	Submitted 2/2/2016
3	Mar 2016	**JB:** 26th Ward HLSS	Construction NTP – Phase I	Mar 2016	Approved by DEC 3/31/2016
4	***Sept 2016***	**FB:** Environmental Dredging of Flushing Bay	NTP	***Sept 2016***	Bids Received. DEP/DEC agreed to new milestone date Sept 2016
5	Jun 2016	**JT:** Bending Weirs	Construction Complete	Jun 2016	On schedule
6	Jun 2016	**CIC:** Coney Island Creek LTCP	Submit Approvable LTCP	Jun 2016	On schedule
7	Jun 2016	**FB:** Flushing Bay LTCP	Submit Approvable LTCP	Jun 2016	On schedule
8	Dec 2016	**FB:** Low Lying Sewers/ Raise Weir at BB-R02	Construction Completion	Dec 2016	On schedule
9	Dec 2016	**WC:** Pugsley Creek Parallel Interceptor	Construction NTP	Dec 2016	Mod Request Submitted to DEC

Appendix 11.3: TABLE - REPORTS TO BE SUBMITTED:

	Milestone	Item	Action	Projected Completion	Status
1	Apr 30, 2016	GI Annual Report	Submit Annual Report	Apr 2016	On schedule
2	Apr 30, 2016	1st Quarterly Report	Submit Report	April 2016	On schedule
3	May 1, 2016	BMP Report	Submit Report	May 2016	On schedule
4	Jun 30, 2016	GI CSO Performance Metrics	Submit Report	June 2016	On schedule
5	Jun 30, 2016	GI Contingency Plans	Submit Report	June 2016	Mod request
6	Jun 30, 2016	PCM Report	Submit Annual Report	June 2016	On schedule

Appendix 11.4: CSO DISCHARGES FOR CY2019 CHECKLIST

			Pre-WWFP			CY2017			CY2018			CY2019 - QPE		
WWTPs	Waterbody	CSO Outfalls	CSO Events (Count)	Annual CSO Volume (MGY)	Total Annual Flow Treated at WWTP (MGY)	CSO Events (Count)	Annual CSO Volume (MGY)	Total Annual Flow Treated at WWTP (MGY)	CSO Events (Count)	Annual CSO Volume (MGY)	Total Annual Flow Treated at WWTP (MGY)	CSO Events (Count)	Annual CSO Volume (MGY)	Total Annual Flow Treated at WWTP (MGY)
						20								
26th Ward		ALL	23	628		18	481	18,795	24	689	21,208	16	251	20,901
26th Ward	HC	26-003	47	494		17	248		25	348		16	154	
26th Ward	HC	26-004	16	36		33	112	18,795	42	125	21,208	31	80	20,901
26th Ward	HC	26-005	5	98		5	121		6	217		1	16	
Bowery Bay		ALL	33	6,083		24	4,472	39,638	40	4,191	39,404	39	2,649	37,947
Bowery Bay	OW	BB-002	NA	988		52	434		68	379		88	167	
Bowery Bay	OW	BB-003	NA	54		24	78		44	41		48	19	
Bowery Bay	OW	BB-005	NA	1,520		41	763		52	464		66	238	
Bowery Bay	FB	BB-006L	NA	1,434		19	220		35	242		23	110	
Bowery Bay	FB	BB-006U	NA			49	1,191		63	811		73	560	
Bowery Bay	FB	BB-007	NA	3		53	241		65	183		80	142	
Bowery Bay	FB	BB-008	NA	534		51	686		63	1,097		77	867	
Bowery Bay	NC	BB-004	NA	0		2	0		3	0		1	0	
Bowery Bay	NC	BB-041	NA	126		49	79		70	106		93	65	
Bowery Bay	NC	BB-009	35	35		28	54		43	50		41	25	
Bowery Bay	NC	BB-010	16	2		9	1		10	1		4	0	
Bowery Bay	NC	BB-011	24	3		13	2		20	2		14	1	
Bowery Bay	NC	BB-012	NA	0		4	0		5	0		1	0	
Bowery Bay	NC	BB-013	44	39		24	14		44	19		44	9	
Bowery Bay	NC	BB-014	35	3		17	2		42	2		36	1	
Bowery Bay	NC	BB-015	39	3		15	1		43	1		39	1	
Bowery Bay	OW	BB-016	NA	2		15	2		41	2		33	1	
Bowery Bay	OW	BB-017	NA	2		17	2		35	1		32	1	
Bowery Bay	OW	BB-018	NA	2		13	1		29	1		20	0	
Bowery Bay	OW	BB-021	NA	31		27	19		44	21		41	11	
Bowery Bay	OW	BB-022	NA	2		11	1		38	1		31	0	
Bowery Bay	OW	BB-023	NA	27		21	15		43	16		35	7	
Bowery Bay	OW	BB-024	NA	97		22	33		45	32		40	15	
Bowery Bay	OW	BB-025	NA	18		21	10		48	9		35	4	
Bowery Bay	NC	BB-026	47	187		34	104		50	134		50	80	
Bowery Bay	OW	BB-027	NA	8		18	6		41	5		31	2	
Bowery Bay	OW	BB-028	NA	456		31	168		48	182		53	96	
Bowery Bay	OW	BB-029	NA	180		22	99		47	86		40	36	
Bowery Bay	OW	BB-030	NA	19		41	23		63	29		86	18	
Bowery Bay	OW	BB-031	NA	22		15	3		45	4		46	2	
Bowery Bay	OW	BB-032	NA	3		13	2		17	2		13	1	
Bowery Bay	OW	BB-033	NA	9		23	6		41	5		31	3	
Bowery Bay	OW	BB-034	NA	223		54	178		73	227		100	151	
Bowery Bay	OW	BB-035	NA	4		24	4		48	4		46	2	
Bowery Bay	OW	BB-036	NA	10		23	9		47	8		39	4	
Bowery Bay	OW	BB-037	NA	1		9	1		12	1		4	0	
Bowery Bay	OW	BB-038	NA	10					0	0		0	0	
Bowery Bay	NC	BB-040	21	1		17	2		27	2		22	1	
Bowery Bay	NC	BB-042	29	2		20	2		39	2		37	1	
Bowery Bay	OW	BB-043	40	14		25	9		43	10		41	6	
Bowery Bay	OW	BB-045	NA	0		0	0		0	0		0	0	
Bowery Bay	OW	BB-046	NA	8		25	6		48	7		40	4	
Bowery Bay	OW	BB-047	NA	2		18	2		31	1		21	1	
Bowery Bay	NC	BB-049	NA											
Bowery Bay	NC	BB-053	NA											
Coney Island		ALL	61	2,749			464	34,396	17	89	37,450	10	336	43,055
Coney Island	PB	CI-004	61	1,210		4	30							
Coney Island	PB	CI-005	61	973		5	41							
Coney Island	PB	CI-006	NA	566		5	22							
Coney Island	PB	Tank	NA			11	372		15	84		17	233	
Coney Island	PB	Tank	NA			5	93	34,396	18	5	37,450	2	103	43,055
Coney Island	PB	Tank	NA			11	372		15	84		17	233	
Hunts Point		ALL	29	4,199		22	2,154	49,410	41	3,382	53,410	33	2,344	37,615
Hunts Point	OW	HP-002	NA	119		34	42		62	52		56	26	
Hunts Point	OW	HP-003	NA	359		35	167		56	180		40	107	
Hunts Point	BR	HP-004	56	100		18	23		32	24		23	11	
Hunts Point	HR	HP-005	NA	0		0	0		6	0		0	0	
Hunts Point	NR	HP-006	NA	0		0	0		0	0		0	0	
Hunts Point	BR	HP-007	21	88		10	36		20	43		10	17	
Hunts Point	BR	HP-008	17	4		3	1		3	3		1	0	
Hunts Point	BR	HP-009	51	814		34	288		56	418		77	682	
Hunts Point	BR	HP-010	1	1		0	0		2	2		0	0	
Hunts Point	OW	HP-011	NA	828		49	211		82	481		62	235	
Hunts Point	WC	HP-012	NA	27		11	32		13	30		7	14	
Hunts Point	WC	HP-013	54	144		20	138		45	237		28	98	
Hunts Point	WC	HP-014	NA	516		44	404		57	563		50	346	
Hunts Point	WC	HP-015	NA	0		3	0		3	1		1	0	
Hunts Point	WC	HP-016	24	72		23	55		54	78		43	41	
Hunts Point	OW	HP-017	NA	35		32	37		56	70		47	40	

Hunts Point	OW	HP-018	NA	2		17	3		49	4		30	2	37614.513
Hunts Point	OW	HP-019	NA	18		26	12		56	19		46	10	97
Hunts Point	OW	HP-020	NA	0		0	0	49,410	19	0	53,410	15	0	
Hunts Point	OW	HP-021	NA	298		40	202		69	407		59	269	
Hunts Point	OW	HP-022	NA	31		24	25		53	45		41	24	
Hunts Point	HR	HP-023	NA	115		42	140		63	215		57	138	
Hunts Point	HR	HP-024	NA	254		33	163		57	229		51	132	
Hunts Point	OW	HP-025	NA	130		46	78		82	142		73	89	
Hunts Point	OW	HP-026	NA	79		23	57		48	85		31	36	
Hunts Point	OW	HP-027	NA	0										
Hunts Point	OW	HP-028	NA	0										
Hunts Point	OW	HP-029	NA	4		24	9		49	15		33	8	
Hunts Point	OW	HP-030	NA	0										
Hunts Point	HR	HP-031	NA	83		32	16		58	22		46	14	
Hunts Point	OW	HP-032	NA	0										
Hunts Point	WC	HP-033	5	78		6	16		5	16		2	4	
Hunts Point	WC	HP-034	NA	0										
Hunts Point	OW	HP-036	NA	0										
Hunts Point	OW	HP-037	NA	0										
Hunts Point	OW	HP-038	NA	0										
Hunts Point	OW	HP-039	NA											
Jamaica		**ALL**	**55**	**1,557**		**28**	**676**	**28,467**	**52**	**1,324**	**29,975**	**45**	**849**	**27,312**
Jamaica	BB	JA-003	47	319		51	524		60	690		65	478	
Jamaica	BB	JA-003A	57	300					46	194		36	108	
Jamaica	TB	JA-005	55	908		11	3	28,467	37	270	29,975	30	143	27,312
Jamaica	TB	JA-007							86	168		83	119	
Jamaica	TB	JA-006	61	30		23	149		32	3		13	1	
Newtown Creek		**ALL**	**49**	**2,974**		**14**	**2,674**	**75,212**	**19**	**3,670**	**85,240**	**13**	**1,863**	**81,092**
Newtown Creek	NC	NC-002	NA											
Newtown Creek	OW	NC-003	NA	1		10	1		8	1		3	0	
Newtown Creek	OW	NC-004	NA	18		30	16		49	21		44	10	
Newtown Creek	OW	NC-005	NA	79		28	37		49	47		40	23	
Newtown Creek	OW	NC-006	NA	104		14	76		21	98		17	35	
Newtown Creek	OW	NC-007	NA	9		22	8		40	9		30	4	
Newtown Creek	OW	NC-008	NA	27		23	20		40	25		31	11	
Newtown Creek	OW	NC-009	NA	0										
Newtown Creek	OW	NC-010	NA	0		0	0		0	0		0	0	
Newtown Creek	OW	NC-011	NA	0		0	0		0	0		0	0	
Newtown Creek	OW	NC-012	NA	27		20	37		33	41		24	15	
Newtown Creek	OW	NC-013	NA	42		21	48		41	77		30	28	
Newtown Creek	OW	NC-014	NA	337		22	615		46	952		33	462	
Newtown Creek	NC	NC-015	33	308		25	265		41	314		30	143	
Newtown Creek	OW	NC-016	NA	4		8	2		9	2		5	0	
Newtown Creek	OW	NC-017	NA	0		8	1		8	1		2	0	
Newtown Creek	OW	NC-018	NA	14		24	10		46	13		38	7	
Newtown Creek	NC	NC-019	NA	0		19	3		22	3		15	1	
Newtown Creek	OW	NC-020	NA	4		16	7		14	7		7	2	
Newtown Creek	NC	NC-021	NA	0		2	0		2	1		0	0	
Newtown Creek	NC	NC-022	42	8		21	7		41	8		25	3	
Newtown Creek	NC	NC-023	NA	0		8	1		8	1		2	0	
Newtown Creek	OW	NC-024	NA	0		0	0		0	0		0	0	
Newtown Creek	OW	NC-025	NA	1		10	1		8	1		3	0	
Newtown Creek	OW	NC-026	NA	0		8	0		7	0		2	0	
Newtown Creek	OW	NC-027	NA	24		23	12		41	15		29	5	
Newtown Creek	OW	NC-028	NA	0		0	0		0	0				
Newtown Creek	NC	NC-029	48	18		37	20		56	28		54	15	
Newtown Creek	OW	NC-030	NA	0		7	0		9	0		3	0	
Newtown Creek	OW	NC-031	NA	1		21	3		25	3		18	1	
Newtown Creek	OW	NC-032	NA	6		8	4		7	3		3	1	
Newtown Creek	OW	NC-033	NA	1		8	1		7	1		2	0	
Newtown Creek	OW	NC-034	NA	0		9	1		8	2		2	0	
Newtown Creek	OW	NC-035	NA	5		14	3		13	2		7	1	
Newtown Creek	OW	NC-036	NA	81		15	61		15	63		7	22	
Newtown Creek	OW	NC-037	NA	0		4	1		6	3		1	0	
Newtown Creek	OW	NC-038	NA	9		15	8		15	8		9	3	
Newtown Creek	OW	NC-039	NA	5		4	1		6	0		3	0	
Newtown Creek	OW	NC-040	NA	1		0	0		0	0		0	0	
Newtown Creek	OW	NC-041	NA	45		15	20		17	21		8	7	
Newtown Creek	OW	NC-042	NA	0		5	1		6	2		2	0	
Newtown Creek	OW	NC-043	NA	4		13	3	75,212	12	3	85,240	8	1	81,092
Newtown Creek	OW	NC-044	NA	1		1	0		1	0		0	0	
Newtown Creek	OW	NC-045	NA	34		15	17		16	18		9	6	
Newtown Creek	OW	NC-046	NA	13		0	0		33	11		20	5	
Newtown Creek	OW	NC-047	NA	1		10	2		8	2		0	0	
Newtown Creek	OW	NC-048	NA	24		14	6		16	6		11	2	
Newtown Creek	OW	NC-049	NA	26		14	17		15	18		10	5	
Newtown Creek	OW	NC-050	NA	53		15	26		23	29		18	11	
Newtown Creek	OW	NC-051	NA	0		5	0		8	1		2	0	
Newtown Creek	OW	NC-052	NA	41		14	24		23	26		17	12	
Newtown Creek	OW	NC-053	NA	3		10	8		8	10		2	2	
Newtown Creek	OW	NC-054	NA	3		8	2		9	5		3	1	
Newtown Creek	OW	NC-055	NA	2		13	1		15	1		7	0	
Newtown Creek	OW	NC-056	NA	72		19	19		32	25		27	13	
Newtown Creek	OW	NC-057	NA	11		12	4		11	5		7	1	
Newtown Creek	OW	NC-058	NA	37		16	15		23	16		18	6	
Newtown Creek	OW	NC-059	NA	44		14	8		18	8		15	3	

Newtown Creek	OW	NC-060	NA	4		3	0		6	0		2	0	
Newtown Creek	OW	NC-061	NA	2		14	2		14	2		13	1	
Newtown Creek	OW	NC-062	NA	17		27	11		50	14		39	8	
Newtown Creek	OW	NC-063	NA	45		14	11		11	12		7	4	
Newtown Creek	OW	NC-064	NA	9		15	7		15	7		8	2	
Newtown Creek	OW	NC-065	NA	0		4	0		4	1		2	0	
Newtown Creek	OW	NC-066	NA	38		10	4		10	4		4	1	
Newtown Creek	OW	NC-067	NA	6		8	3		10	4		4	1	
Newtown Creek	OW	NC-068	NA	0		3	0		3	0		0	0	
Newtown Creek	OW	NC-069	NA	8		10	6		10	7		4	2	
Newtown Creek	OW	NC-070	NA	1		18	3		22	4		13	2	
Newtown Creek	OW	NC-071	NA	10		18	2		20	5		12	2	
Newtown Creek	OW	NC-072	NA	9		14	6		14	7		8	3	
Newtown Creek	OW	NC-073	NA	29		18	23		22	24		19	10	
Newtown Creek	OW	NC-074	NA	13		14	8		14	9		8	3	
Newtown Creek	OW	NC-075	NA	81		19	66		28	69		16	28	
Newtown Creek	OW	NC-076	NA	292		35	180		53	240		47	122	
Newtown Creek	NC	NC-077	49	262		55	468		67	698		69	478	
Newtown Creek	OW	NC-078	NA	11		3	1		4	1		1	0	
Newtown Creek	OW	NC-079	NA	1					19	1		12	1	
Newtown Creek	OW	NC-080	NA	2		13	1		17	1		6	0	
Newtown Creek	OW	NC-081	NA	2		14	1		20	1		12	0	
Newtown Creek	OW	NC-082	NA	0		10	1		8	1		3	0	
Newtown Creek	NC	NC-083	71	586		43	426		61	596		63	324	
Newtown Creek	OW	NC-087	NA	1		10	3		6	4		2	1	
North River		**ALL**		**806**		**13**	**569**	**39,984**	**14**	**593**	**40,159**	**8**	**179**	**40,204**
North River	OW	NR-002	NA	54		42	27		56	42		47	19	
North River	OW	NR-003	NA	9		9	6		11	8		6	1	
North River	OW	NR-004	NA	7		12	8		12	10		6	1	
North River	OW	NR-005	NA	0		1	0		1	0		0	0	
North River	OW	NR-006	NA	76		16	38		30	46		15	15	
North River	OW	NR-007	NA	2		9	1		9	2		5	0	
North River	OW	NR-008	NA	27		31	17		52	26		37	13	
North River	OW	NR-009	NA	3		17	1		27	2		12	1	
North River	OW	NR-010	NA	14		15	10		17	10		11	3	
North River	OW	NR-011	NA	3		8	2		7	2		4	0	
North River	OW	NR-012	NA	2		6	1		6	1		4	0	
North River	OW	NR-013	NA	1		6	0		5	0		4	0	
North River	OW	NR-014	NA	3		8	1		8	1		5	0	
North River	OW	NR-016	NA	3		7	1		7	1		4	0	
North River	OW	NR-017	NA	67		16	22		30	30		13	12	
North River	OW	NR-018	NA	0		2	0		3	0		0	0	
North River	OW	NR-019	NA	5		15	4		20	4		10	1	
North River	OW	NR-020	NA	18		18	12		31	14		16	5	
North River	OW	NR-021	NA	6		15	3		14	4		8	1	
North River	OW	NR-022	NA	16		9	5		13	7		7	3	
North River	OW	NR-023	NA	41		8	19		12	24		7	7	
North River	OW	NR-024	NA	18		12	8		12	10		7	3	
North River	OW	NR-025	NA	19		10	8		12	9		7	3	
North River	OW	NR-026	NA	26		18	14		31	18		15	6	
North River	OW	NR-027	NA	72		83	92		12	79		7	28	
North River	OW	NR-028	NA	13		6	2	39,984	6	2	40,159	5	1	40,204
North River	OW	NR-029	NA	7		11	3		12	4		7	1	
North River	OW	NR-030	NA	3		6	1		5	1		4	0	
North River	OW	NR-031	NA	4		8	2		10	2		6	1	
North River	OW	NR-032	NA	2		5	1		4	1		3	0	
North River	OW	NR-033	NA	24		9	32		12	39		6	6	
North River	OW	NR-034	NA	8		14	4		17	6		8	2	
North River	OW	NR-035	NA	10		15	6		21	7		11	2	
North River	OW	NR-036	NA	20		12	10		17	12		8	4	
North River	OW	NR-037	NA	1		5	3		4	5		0	0	
North River	OW	NR-038	NA	6		9	9		10	13		4	2	
North River	OW	NR-039	NA	0		0	0		1	0		0	0	
North River	OW	NR-040	NA	33		9	21		12	26		6	5	
North River	OW	NR-041	NA	3		10	2		10	3		4	0	
North River	OW	NR-042	NA	4		14	3		12	4		7	1	
North River	OW	NR-043	NA	132		24	129		27	70		14	19	
North River	OW	NR-044	NA	2		12	2		12	2		5	0	
North River	OW	NR-045	NA	17		14	16		14	15		9	4	
North River	OW	NR-046	NA	8		14	10		16	13		9	3	
North River	OW	NR-047	NA	0		4	0		3	0		0	0	
North River	OW	NR-048	NA	4		13	3		16	4		8	1	
North River	OW	NR-049	NA	14		26	10		24	11		12	3	
North River	OW	NR-050	NA	0		5	0		3	0		0	0	
North River	OW	NR-051	NA	0		0	0							
North River	OW	NR-052	NA	2		6	1		4	1		2	0	
North River	OW	NR-055	NA	1		8	1		6	1		5	0	
North River	OW	NR-056	NA	0		0	0							
Owls Head	**OW**	**ALL**	**30**	**2,791**		**26**	**2,455**	**34,745**	**44**	**3,303**	**35,597**	**48**	**3,279**	**40,651**
Owls Head	OW	OH-002	NA	413		37	461		45	471		50	427	
Owls Head	OW	OH-003	NA	397		42	300		86	422		111	408	
Owls Head	OW	OH-004	NA	1		16	10		21	6		19	5	
Owls Head	GC	OH-005	5	1		3	1		4	0		3	2	
Owls Head	GC	OH-006	33	13		24	19		45	26		48	22	
Owls Head	GC	OH-007	47	69		42	61		59	83		66	81	
Owls Head	OW	OH-015	NA	1,140		23	989		85	1,408		90	1,453	

Owls Head	OW	OH-017	NA	235		31	354		47	610		52	603	
Owls Head	OW	OH-018	NA	163		36	131	34,745	48	139	35,597	52	141	40,651
Owls Head	OW	OH-019	NA	42		32	29		44	27		49	26	
Owls Head	OW	OH-020	NA	1		23	2		35	1		37	1	
Owls Head	OW	OH-021	NA	292		15	69		35	68		33	73	
Owls Head	GC	OH-022	NA	0										
Owls Head	OW	OH-023	NA	1		8	2		18	2		13	2	
Owls Head	GC	OH-024	35	23		25	26		48	39		50	34	
Owls Head	GC	OH-025	NA											
Owls Head	GC	OH-026	NA											
Port Richmond	**OW**	**ALL**		**550**		**12**	**334**	**9,343**	**21**	**597**	**10,960**	**27**	**787**	**11,518**
Port Richmond	OW	PR-002	NA	0		0	0		0	0		0	0	
Port Richmond	OW	PR-003	NA	0		0	0		0	0		0	0	
Port Richmond	OW	PR-004	NA	0		0	0		0	0		0	0	
Port Richmond	OW	PR-005	NA	0		1	0		0	0		2	0	
Port Richmond	OW	PR-006	NA	6		10	4		25	4		30	7	
Port Richmond	OW	PR-007	NA	0		0	0		0	0		0	0	
Port Richmond	OW	PR-008	NA	0		0	0		0	0		0	0	
Port Richmond	OW	PR-009	NA	0		0	0		0	0		0	0	
Port Richmond	OW	PR-010	NA	0		6	1		7	0		8	1	
Port Richmond	OW	PR-011	NA	0		1	0		3	0		4	0	
Port Richmond	OW	PR-013	NA	28		22	25		39	40		49	55	
Port Richmond	OW	PR-014	NA	23		34	19		55	34		66	44	
Port Richmond	OW	PR-015	NA	1		8	1		18	1		22	2	
Port Richmond	OW	PR-016	NA	0		17	1		30	1		38	2	
Port Richmond	OW	PR-017	NA	12		27	6		47	14		64	19	
Port Richmond	OW	PR-018	NA	3		26	1		48	4		62	6	
Port Richmond	OW	PR-019	NA	26		30	28		52	68		67	89	
Port Richmond	OW	PR-020	NA	2		30	4		52	28		67	35	
Port Richmond	OW	PR-021	NA	0		14	0	9,343	46	8	10,960	57	9	11,518
Port Richmond	OW	PR-023	NA	0		0	0		39	39		46	51	
Port Richmond	OW	PR-023A	NA	76		48	56							
Port Richmond	OW	PR-023B	NA											
Port Richmond	OW	PR-024	NA	0		1	0		0	0		1	0	
Port Richmond	OW	PR-025	NA	0		0	0		0	0		0	0	
Port Richmond	OW	PR-026	NA	1		2	1		3	0		4	1	
Port Richmond	OW	PR-027	NA	1		5	1		8	0		9	1	
Port Richmond	OW	PR-028	NA	10		20	7		37	11		44	17	
Port Richmond	OW	PR-029	NA	217		32	84		50	155		66	212	
Port Richmond	OW	PR-030	NA	0		28	1		52	9		67	12	
Port Richmond	OW	PR-031	NA	139		32	94		52	179		67	219	
Port Richmond	OW	PR-032	NA	0		14	1		24	1		36	1	
Port Richmond	OW	PR-033	NA	0		0	0		0	0		0	0	
Port Richmond	OW	PR-034	NA	0		0	0		0	0		0	0	
Port Richmond	OW	PR-035	NA	0		0	0		0	0		0	0	
Port Richmond	OW	PR-036	NA	0		0	0		0	0		0	0	
Port Richmond	OW	PR-037	NA	4		8	2		19	1		26	3	
Red Hook	**OW**	**ALL**		**670**		**19**	**584**	**10,982**	**26**	**639**	**13,501**	**18**	**293**	**10,718**
Red Hook	OW	RH-002	NA	0		0	0		0	0		0	0	
Red Hook	OW	RH-003	NA	0		12	1		8	1		4	0	
Red Hook	OW	RH-005	NA	153		21	162		37	144		23	62	
Red Hook	OW	RH-006	NA	8		28	10		40	9		25	4	
Red Hook	OW	RH-007	NA	1		15	1		21	1		16	1	
Red Hook	OW	RH-008	NA	2		19	3		28	3		17	1	
Red Hook	OW	RH-009	NA	2		19	3		30	2		19	1	
Red Hook	OW	RH-010	NA	0		8	0		3	0		1	0	
Red Hook	OW	RH-011	NA	3		18	5		27	4		14	1	
Red Hook	OW	RH-012	NA	8		18	11		24	11		13	3	
Red Hook	OW	RH-013	NA	0		15	0		4	0		1	0	
Red Hook	OW	RH-014	NA	20		46	35		56	47		56	24	
Red Hook	OW	RH-016	NA	18		20	35		35	41		23	18	
Red Hook	OW	RH-018	NA	4		20	11		33	11		23	5	
Red Hook	OW	RH-019	NA	13		21	14		37	22		23	9	
Red Hook	OW	RH-020	NA	0		17	2		16	2		8	0	
Red Hook	OW	RH-021	NA	0		21	10	10,982	36	4	13,501	23	6	10,718
Red Hook	OW	RH-022	NA	2		21	4		35	7		21	3	
Red Hook	OW	RH-023	NA	2		21	4		34	6		22	3	
Red Hook	OW	RH-024	NA	2		21	4		32	6		21	3	
Red Hook	OW	RH-025	NA	5		21	6		34	10		22	5	
Red Hook	OW	RH-028	NA	97					23	31		12	8	
Red Hook	OW	RH-029	NA	2		20	3		29	2		17	1	
Red Hook	GC	RH-030	NA	18		17	22		28	22		22	9	
Red Hook	GC	RH-030 A	NA											
Red Hook	GC	RH-031	NA	35		17	25		28	23		22	9	
Red Hook	GC	RH-033	NA	0		11	1		6	0		3	0	
Red Hook	GC	RH-034	NA	121		44	175		55	198		52	100	
Red Hook	GC	RH-035	NA	111		17	10		26	8		13	3	
Red Hook	GC	RH-036	NA	2		18	2		19	2		15	1	
Red Hook	GC	RH-037	NA	1		12	1		7	0		4	0	
Red Hook	GC	RH-038	NA	1		12	1		11	1		8	0	
Red Hook	OW	RH-040	NA	37		21	25		34	23		23	10	
Tallman Island	**OW**	**ALL**	**45**	**2,375**		**29**	**1,444**	**22,406**	**38**	**2,110**	**24,939**	**37**	**1,430**	**25,844**
Tallman Island	OW	TI-003	NA	127		50	72		75	142		101	232	
Tallman Island	OW	TI-004	NA	10		16	5		25	6		15	2	
Tallman Island	OW	TI-005	NA	0		7	0		2	0		2	0	
Tallman Island	AC	TI-006	NA	0										

Tallman Island	AC	TI-007	NA	0		3	0		3	0		0	0		
Tallman Island	AC	TI-008	38	59		0	0		0	0		0	0		
Tallman Island	AC	TI-009	NA	0		0	0		0	0		0	0		
Tallman Island	FB	TI-010	73	1,580		28	677		60	873		54	430		
Tallman Island	FC	TI-011	54	332		53	280		86	522		67	421		
Tallman Island	FC	TI-012	NA	0											
Tallman Island	FB	TI-013	NA	0											
Tallman Island	FB	TI-014	32	2		42	13	22,406	51	19	24,939	55	12	25,844	
Tallman Island	FB	TI-015	29	1		31	5		35	6		29	3		
Tallman Island	FB	TI-016	45	28		46	31		58	47		64	37		
Tallman Island	FB	TI-017	NA	0		25	4		34	5		27	2		
Tallman Island	FB	TI-018	34	2		43	6		45	8		49	5		
Tallman Island	OW	TI-019	NA	0		19	2		24	3		17	1		
Tallman Island	OW	TI-020	NA	6		41	8		44	10		47	6		
Tallman Island	FB	TI-022	55	30		58	78		72	115		75	85		
Tallman Island	OW	TI-023	NA	198		35	114		47	148		49	86		
Tallman Island	AC	TI-024	NA	0											
Tallman Island	AC	TI-025	NA	0		17	148		30	208		23	106		
Wards Island	**OW**	**ALL**		**4,181**		**30**	**3,319**	**70,636**	**47**	**3,729**	**79,192**	**34**	**2,130**	**74,996**	
Wards Island	OW	WI-002	NA	11		69	12		59	9		61	6		
Wards Island	OW	WI-003	NA	115		63	7		65	119		69	79		
Wards Island	OW	WI-004	NA	12		58	5		60	9		60	5		
Wards Island	OW	WI-005	NA	10		69	13		53	7		50	4		
Wards Island	OW	WI-006	NA	12		69	17		59	8		52	4		
Wards Island	OW	WI-007	NA	11		1			54	8		48	4		
Wards Island	OW	WI-008	NA	224		39	7		62	194		62	126		
Wards Island	OW	WI-009	NA	0		43	104		1	0		0	0		
Wards Island	OW	WI-010	NA	0		34	8		1	0		0	0		
Wards Island	OW	WI-011	NA	3		33	7		23	4		17	1		
Wards Island	OW	WI-012	NA	41		33	7		46	28		23	11		
Wards Island	OW	WI-013	NA	1		32	7		45	0		19	0		
Wards Island	OW	WI-014	NA	1		45	169		45	1		17	0		
Wards Island	OW	WI-015	NA	14		0	0		46	11		18	3		
Wards Island	OW	WI-016	NA	30		0	0		50	25		41	12		
Wards Island	OW	WI-017	NA	17		15	4		46	12		19	4		
Wards Island	OW	WI-018	NA	1		30	28		43	1		17	0		
Wards Island	OW	WI-019	NA	1		12	0		44	1		17	0		
Wards Island	OW	WI-020	NA	0											
Wards Island	OW	WI-021	NA	1		28	11		41	1		17	0		
Wards Island	OW	WI-022	NA	1		30	25		43	1		16	0		
Wards Island	OW	WI-023	NA	79		50	14		45	63		27	26		
Wards Island	OW	WI-024	NA	100		15	1		46	80		19	24		
Wards Island	OW	WI-025	NA	35		37	6		58	33		59	22		
Wards Island	OW	WI-026	NA	1		21	1		38	1		17	0		
Wards Island	OW	WI-027	NA	1		16	1		35	0		16	0		
Wards Island	OW	WI-028	NA	1		16	1		46	1		17	0		
Wards Island	OW	WI-029	NA	3		27	65		46	2		18	1		
Wards Island	OW	WI-030	NA	2		27	87		46	1		17	0		
Wards Island	OW	WI-031	NA	5		43	30		46	6		18	2		
Wards Island	OW	WI-032	NA	0		19	1		41	0		17	0		
Wards Island	OW	WI-033	NA	4		17	1		45	4		17	1		
Wards Island	OW	WI-034	NA	1		21	1		46	1		17	0		
Wards Island	OW	WI-035	NA	8		25	3		46	9		20	3		
Wards Island	OW	WI-036	NA	3		24	1		56	3		49	1		
Wards Island	OW	WI-037	NA	9		27	7		46	10		18	3		
Wards Island	OW	WI-038	NA	39		11	0		46	32		24	12		
Wards Island	OW	WI-039	NA	3		22	5		46	3		19	1		
Wards Island	OW	WI-040	NA	3		26	1	70,636	46	2	79,192	21	1	74,996	
Wards Island	OW	WI-041	NA	13		26	10		47	11		35	4		
Wards Island	OW	WI-042	NA	3		23	3		46	3		27	1		
Wards Island	OW	WI-043	NA	7		26	1		46	5		18	1		
Wards Island	OW	WI-044	NA	6		27	10		47	5		34	2		
Wards Island	OW	WI-045	NA	63		29	33		57	56		52	29		
Wards Island	OW	WI-046	NA	158		24	4		59	182		61	110		
Wards Island	OW	WI-047	NA	23		25	3		59	25		60	17		
Wards Island	OW	WI-048	NA	13		29	11		59	14		59	11		
Wards Island	OW	WI-049	NA	69					49	162		39	44		
Wards Island	OW	WI-050	NA	69		28	3		55	23		56	17		
Wards Island	OW	WI-051	NA	21		29	5		48	23		45	15		
Wards Island	OW	WI-052	NA	48		33	50		60	50		60	35		
Wards Island	OW	WI-053	NA	30		38	82		82	62		88	53		
Wards Island	OW	WI-054	NA	28		40	33		59	40		63	31		
Wards Island	OW	WI-055	NA	9		11	4		66	23		64	19		
Wards Island	OW	WI-056	NA	1,543		36	353		65	1,000		63	688		
Wards Island	OW	WI-057	NA	179		28	181		64	174		64	119		
Wards Island	OW	WI-058	NA	50		27	135		52	48		44	26		
Wards Island	OW	WI-059	NA	5		26	4		33	9		22	4		
Wards Island	OW	WI-060	NA	228		40	22		50	363		47	204		
Wards Island	OW	WI-061	NA	2		11	0		19	8		12	2		
Wards Island	OW	WI-062	NA	175		36	251		47	76		41	70		
Wards Island	OW	WI-063	NA	13		27	62		49	14		44	4		
Wards Island	OW	WI-064	NA	43		39	41		42	39		31	12		
Wards Island	OW	WI-065	NA	5		37	15		46	3		19	0		
Wards Island	OW	WI-066	NA	2		38	11		30	2		12	0		
Wards Island	OW	WI-067	NA	13		38	20		42	15		20	4		
Wards Island	OW	WI-068	NA	222		38	159		46	170		31	15		

Wards Island	OW	WI-069	NA	0		51	861		5	0		0	0	
Wards Island	OW	WI-070	NA	11		48	147		43	14		35	5	
Wards Island	OW	WI-071	NA	29		32	51		44	29		31	10	
Wards Island	OW	WI-072	NA	46		19	10		44	53		36	20	
Wards Island	OW	WI-073	NA	11		27	35		42	3		16	0	
Wards Island	OW	WI-074	NA	0										
Wards Island	OW	WI-075	NA	123		30	22		46	121		43	44	
Wards Island	OW	WI-076	NA	43		27	13		56	72		58	55	
Wards Island	OW	WI-077	NA	77		3	0		58	100		57	70	
Wards Island	OW	WI-078	NA	0		26	16		55	41		56	29	
Wards Island	OW	WI-079	NA	0										

Average			38	73		20	52	36,168	31	63	39,253	25	43	37,654
Total			1,692	29,564		7,652	19,626	434,014	11,889	24,316	471,035	9,803	16,389	451,853

Appendix 12.1: Status of All Telemetered Regulators with Potential CSO Discharges Outside of a Critical Wet Weather Event

Status of All Telemetered Regulators with Potential CSO Discharges Outside of a Critical Wet Weather Event

No.	WWTP	Reg No.	Outfall SPDES No.	Key Regulator	2015 BMP Report Original Category	2016 BMP Report Updated Category	2017 BMP Report Updated Category	2018 BMP Report Updated Category	2019 BMP Report Updated Category	2020 BMP Report Updated Category (Current)	Monitoring Status in 2020 BMP Report	Additional Notes
1	26W	01	004	Key	A	A	A	A	A	A	monthly monitoring (key) 12-month analysis upon construction completion	Capital Improvements: 5th PST construction at 26W - May 2021 (delayed due to Force Majeure)
2	26W	02	003	Key	A	A	A	A	A	A	monthly monitoring (key) 12-month analysis upon construction completion	Capital Improvements: HLSS - Dec 2022 (delayed due to Force Majeure) & 5th PST construction at 26W - May 2021 (delayed due to Force Majeure)
3	26W	03	005		E	E	E	E	E	E	no further monitoring	Does not directly discharge to a waterbody
1	BBL	L-04	026	Key	A	A	A	A	C	C	monthly monitoring (key) 12 month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) NC LTCP recommends diverting this flow to an expanded Borden Ave Pump Station
2	BBL	L-21	028		A	A	A	A	C	C	12-month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
3	BBL	L-22	029	Key	A	A	A	A	C	B	monthly monitoring (key) 12 month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
4	BBL	L-23	030		A	A	A	A	C	C	12-month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
5	BBL	L-30	034		A	A	A	A	C	C	12-month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
6	BBH	02	002	Key	A	A	A	A	B	B	monthly monitoring (key) 12 month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) Key regulator that averaged one or fewer events per month
7	BBH	03	003		A	A	A	A	C	C	12-month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
8	BBH	06	008	Key	A	A	A	A	C	C	monthly monitoring (key) 12 month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) FB LTCP recommends a CSO Storage Tunnel for outfalls BB-006 & BB-008
9	BBH	09	008		A	A	A	A	C	C	12-month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) FB LTCP recommends a CSO Storage Tunnel for outfalls BB-006 & BB-008
1	HP	01	022		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
2	HP	02	023		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
3	HP	03	019		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
4	HP	04	016		C	C	A	A	A	A	LTCP consideration	Capital Improvements: installation of Pugsley Parallel Interceptor (CS-ER-WCP) - Feb 2020 (COMPLETE)
5	HP	05	011	Key	A	A	A	A	A	A	monthly monitoring (key) 12-month analysis upon construction completion	Capital Improvements: installation of Pugsley Parallel Interceptor (CS-ER-WCP) - Feb 2020 (COMPLETE) Bronx River LTCP recommended modifications to this regulator to mitigate floatables
6	HP	06	011		E	E	E	E	E	E	no further monitoring	Does not directly discharge to a waterbody
7	HP	08	025		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
8	HP	09	002		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
9	HP	10	003	Key	C	C	C	C	C	B	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
10	HP	11	017		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
11	HP	12	018		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
12	HP	13	009	Key	B	C	C	C	C	C	monthly monitoring (key) LTCP consideration	Bronx River LTCP recommended weir modification and parallel sewer at this regulator
13	HP	14	026		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
1	JA	01	006		D	D	D	D	D	D	12-month analysis once equipment available	Absence of power to operate telemetry
2	JA	02	26W-005		E	E	E	E	E	E	no further monitoring	Does not directly discharge to a waterbody
3	JA	03	003	Key	A	A	A	A	A	A	monthly monitoring (key)	Capital Improvements: installation of bending weirs, parallel interceptor, & new lateral sanitary sewer - (June 2020)
4	JA	09	005		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
5	JA	14	003a		A	A	A	A	A	A	12-month analysis to be performed	Capital Improvements: installation of bending weirs, parallel interceptor, & new lateral sanitary sewer - (June 2020)

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1	NC(Q)	Q-01	077		A	A	A	C	C	C	LTCP consideration	Newtown Creek LTCP recommends storage tunnel for outfalls NC-077,NC-015, & NC-083
2	NC(B)	B-01	015	Key	A	A	A	C	C	C	monthly monitoring (key) LTCP consideration	Newtown Creek LTCP recommends storage tunnel for outfalls NC-077,NC-015, & NC-083
3	NC(B)	B-04	014	Key	B	C	C	C	C	C	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Water LTCP
4	NC(B)	B-05	013		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Water LTCP
5	NC(B)	B-06	012		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
6	NC(B)	B-09	006		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
7	NC(M)	M-01	076		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
8	NC(M)	M-02	075		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
9	NC(M)	M-10	069		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
10	NC(M)	M-16	078		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
11	NC(M)	M-17	066		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
12	NC(M)	M-19	050		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
13	NC(M)	M-21	063		D	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
14	NC(M)	M-36	052		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
15	NC(M)	M-37	049		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
16	NC(M)	M-40	045		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
17	NC(M)	M-42	041		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
18	NC(M)	M-44	037		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
19	NC(M)	M-47	036	Key	B	B	B	C	B	C	monthly monitoring (key)	Was evaluated under the Citywide / Open Waters LTCP
20	NC(M)	M-50	032		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
1	NR	N-03	017		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
2	NR	N-16	006	Key	B	C	B / C	C	C	C	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
3	NR	N-18	004		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
4	NR	N-23	043	Key	B	B	B	C	C	B	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
5	NR	N-26	040		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
6	NR	N-28	038		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
7	NR	N-29A	046		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
8	NR	N-33	033	Key	B	B	B	B	B	B	monthly monitoring (key)	Key regulator that averaged one or fewer events per month
9	NR	N-45	027		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
10	NR	N-50	023		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
1	OH	01	017	Key	C	B / C	B / C	B	C	B	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
2	OH	03	018		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
3	OH	04	019		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
4	OH	06	002	Key	C	C	B / C	B	B	B	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Water LTCP
5	OH	07	003		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Water LTCP
6	OH	10			A	C	C	C	C	C	LTCP consideration	
7	OH	11			A	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
8	OH	7D	004		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
9	OH	9A	015		A	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
10	OH	9B	015		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
1	PR	R-13E	031	Key	C	C	C	C	C	C	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Water LTCP
2	PR	R-35W	035		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
3	PR	R-06W	029	Key	C	C	C	C	C	C	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Water LTCP
1	RH	R-02	018	Key	B	B	B	B	B	B	monthly monitoring (key)	Key regulator that averaged one or fewer events per month
2	RH	R-20	004	Key	B	B	B	B	B	B	monthly monitoring (key)	Key regulator that averaged one or fewer events per month
3	RH	R-21	003		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month

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1	RK	01	029		B	B	B	B	B	B	no further monitoring	Non-key regulator that averaged one or fewer events per month
1	TI	09	011	Key	A	C	B / C	C	C	C	monthly monitoring (key) LTCP consideration	Flushing Creek LTCP recommends floatables control and disinfection of outfalls TI-010 & TI-011
2	TI	10A	003	Key	B	B	B	B	B	B	monthly monitoring (key)	Key regulator that averaged one or fewer events per month
3	TI	13	023		C	C	C	C	C	C	LTCP consideration	Was evaluated under the Citywide / Open Water LTCP
4	TI	30	010		E	E	E	E	E	E	no further monitoring	Does not directly discharge to a waterbody
5	TI	40	010		E	E	E	E	E	E	no further monitoring	Does not directly discharge to a waterbody
6	TI	46	008		E	E	E	E	E	E	no further monitoring	Does not directly discharge to a waterbody
7	TI	47	008		E	E	E	E	E	E	no further monitoring	Does not directly discharge to a waterbody
8	TI	49	008		E	E	E	E	E	E	no further monitoring	Does not directly discharge to a waterbody
1	WI(M)	02B	003		A	A	A	A	A	A	12-month analysis to be performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
2	WI(M)	07	008		A	A	A	A	A	A	12-month analysis to be performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
3	WI(M)	23	023	Key	A	A	A	A	A	B	monthly monitoring (key)	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
4	WI(M)	24	024		A	A	A	A	A	A	12-month analysis to be performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
5	WI(M)	38	038		A	A	A	A	A	A	12-month analysis to be performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
6	WI(M)	45	045		A	A	A	A	A	A	12-month analysis to be performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
7	WI(M)	46	046		A	A	A	A	A	A	12-month analysis to be performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
8	WI(M)	51	051		A	A	A	A	A	A	12-month analysis to be performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
9	WI(M)	52	052		A	A	A	A	A	A	12-month analysis to be performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
10	WI(B)	53	068	Key	A	A	A	A	A	B	monthly monitoring (key)	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Water LTCP
11	WI(B)	58	075		A	A	A	A	A	A	12-month analysis to be performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
12	WI(B)	60	062		A	A	A	A	A	A	12-month analysis to be performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
13	WI(B)	62	060		A	A	A	A	A	A	12-month analysis to be performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
14	WI(B)	66	057		E	N/A	N/A	N/A	N/A	N/A	N/A	removed from list of telemetered regulators
15	WI(B)	67	056	Key	A	A	A	A	A	B	monthly monitoring (key)	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
16	WI(B)	68	072		A	A	A	A	A	A	12-month analysis to be performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP

Category Definition

Status of All Telemetered Regulators with Potential CSO Discharges Outside of a Critical Wet Weather Event

No.	WWTP	Reg No.	Outfall SPDES No.	Key Regulator	2015 BMP Report Original Category	2016 BMP Report Updated Category	2017 BMP Report Updated Category	2018 BMP Report Updated Category	2019 BMP Report Updated Category	2020 BMP Report Updated Category (Current)	Monitoring Status in 2020 BMP Report	Additional Notes

A Current or future capital improvements potentially render collected data unrepresentative of future conditions
B Averaged one or fewer potential discharges outside the period of a critical wet weather event per month
C Averaged two or more potential discharges outside the period of a critical wet weather event per month
D Data collection issue / data not reported
E Telemetered regulator that does not directly discharge to a waterbody